

ART. X. THE LEPIDOPTERA NAMED BY GEORGE A.  
EHRMANN.

By W. J. HOLLAND.<sup>1</sup>

---

(PLATES XXV-XXX.)

By his last will and testament Mr. George A. Ehrmann bequeathed to the Carnegie Museum his entire collection of insects together with his library of books relating to entomology. Inasmuch as the collection contains a number of species and varieties described by him as new to science, it seems desirable before incorporating it in the general collection of the Museum to publish a complete list of the papers of which Ehrmann was the author, as well as a critical evaluation of the species which he named, accompanied by figures of some of his types.

Mr. Ehrmann, while displaying great industry and commendable zeal in the prosecution of his favorite studies, did not always seek recourse to the literature of the subject, which might have been made available to him. Though he possessed a considerable collection of books, some of them now quite rare and not easily obtainable, he lacked many of the more important works of reference, and accordingly at times reached conclusions, which it is to be regretted are not always correct. It therefore, becomes a duty in the interest of scientific nomenclature to ascertain, as nearly as may be possible, the validity or nonvalidity, as the case may be, of the various species and

<sup>1</sup> NOTE: The portion of this paper, which deals with the species and varieties of the genus *Parnassius*, which were published by Ehrmann, has been kindly supplied by Mr. A. Avinoff, the Director of the Carnegie Museum, who has for a number of years been recognized in Europe as one of the leading specialists in this group, and who is undoubtedly the highest authority upon the Parnassiidæ in America at the present time. His travels and collections in Siberia, Turkestan, the Pamir, Thibet, Mongolia, and elsewhere, were largely made for the purpose of elucidating the truth as to these beautiful and novel butterflies, about many of the palæarctic species of which little was known until he studied them in their native haunts among the lofty mountain-ranges and upon the cold steppes of Central and Northern Asia.

W. J. HOLLAND.

varieties which he described and published. I have taken up the task somewhat reluctantly, but with the feeling, that, unless now done, there is likely in future years to arise more or less confusion among lepidopterists as to the species which Mr. Ehrmann named.

Ehrmann's first article appeared in *The Entomological News*, Vol. I, 1890, p. 93. He continued at intervals thereafter to contribute to that journal, to *The Canadian Entomologist*, and to the *Journal of the New York Entomological Society*. In 1900 an article from his pen appeared in that short-lived little periodical, *The Entomological Student*, four numbers of which were issued in Philadelphia in that year. In 1917 "*The Lepidopterist, the Official Organ of the Boston Entomological Club*" began to appear under the editorial control of S. E. Cassino. Three volumes were issued and in the first of these is a paper by Ehrmann. Differences arose between the Boston Entomological Club and their Editor and Publisher, leading to a formal repudiation by the Club of Mr. Cassino's editorship. The Club continued the journal under the name "*Lepidoptera, the Official Organ of the Boston Entomological Club.*" It appears to have chronologically overlapped some of the later issues of *The Lepidopterist*, and was carried forward under the new name until the fall of 1921, when it expired. Both *The Lepidopterist*, and its successor, *Lepidoptera*, had a limited circulation, and are now almost impossible to obtain. Of the twenty papers published by Ehrmann, subsequent to 1912, eighteen are to be found in these obscure and little known journals. Two papers were published by Ehrmann in the New Series of the Bulletin of the Brooklyn Entomological Society. His last paper was published in the *Encyclopédie Entomologique*, Paris, Sér B. III, Lep. 1, pp. 88-92.

At the outset I give a complete list of Mr. Ehrmann's writings. In the preparation of this I have been greatly aided by the discovery among Mr. Ehrmann's papers of a small note-book, in which he had written a list of all the species described by him, with references to the places in which the descriptions or figures may be found. The first page of this manuscript list states that "all the types mentioned herein are in my cabinets, except *Col. philodice* var. *alba* ♂." The list enumerates many names which never were published. These names relate to specimens, which are figured in several volumes of plates, which he himself had carefully drawn, and which at one time he may have thought of giving to the world.



These colored plates recall those of Cramer and Hübner in the style of their execution. To some of the species on these plates he gave names, and the insects are in his collection designated by the names he gave them, and frequently the word "TYPE" is attached to the pins. These names are purely manuscript names, and, so far as I have been able to determine, it has been well that he did not publish them, as by so doing he only would have added to the already burdensome synonymy.

Under each title in the following list I give the names of the species described in the given paper. These papers are, so far as possible, arranged in the chronological order of their appearance.

1890. (1) COLIAS PHILODICE, AB. ALBA, ♂.  
Ent. News, I, June, 1890, p. 93; *l. c.*, p. 130.
1892. (2) A LOCAL LIST OF THE GENUS CATOCALA.  
Ent. News, III, Sept. 1892, pp. 168-9.
1893. (3) SOME OLD<sup>2</sup> FORMS OF OUR COMMON DIURNALS, WITH A FEW REMARKS.  
Ent. News, IV, March, 1893, pp. 75-6.
- (4) VARIETY OF PRIONOXYSTUS ROBINIÆ.  
Canad. Entom. XXV, Oct. 1893, p. 257.  
*P. robinia* var. *quercus*, var. nov.
- (5) A NEW HESPERID FROM WEST AFRICA.  
Ent. News, IV, Nov. 1893, pp. 309-310.  
*Tagiades dannatti*, sp. nov., Liberia.
- (6) A STRANGE FORM OF CATOCALA.  
Journ. N. Y. Ent. Soc., I, Dec. 1893.  
*Catocala denussa*, sp. nov., Allegheny Co., Pa.
1894. (7) THREE NEW WEST AFRICAN MOTHS.  
Can. Ent., XXVI, March, 1894, pp. 69-70.  
*Syntomis hilda*, sp. nov., ♂, ♀, Liberia.  
*Syntomis abdominalis*, sp. nov., ♂. Liberia.  
*Pachypas (sic) [Pachypasa] nasmithii*, sp. nov., ♂. Cape Palmas, Africa.
- (8) NEW WEST AFRICAN BUTTERFLIES.  
Journ. N. Y. Ent. Soc., II, June, 1894, pp. 77-78.

<sup>2</sup>The word "OLD" in the title is evidently a misprint for ODD. W. J. H.

- Pseudopontia cepheus*, sp. nov., ♂. Liberia.  
*Mycalesis erysichthon*, sp. nov., ♂. Liberia.  
*Argiolus hollandi*, sp. nov., 1 ♂, 3 ♀ ♀. Liberia.  
*Liptena pseudosoyauxii*, sp. nov., ♀. Liberia.
- (9) ADDITION TO A LOCAL LIST OF THE GENUS  
 CATOCALA AND A NOTE ON PAPILIO CRES-  
 PHONTES.  
 Ent. News, V, Sept. 1894, p. 212.
- (10) A FEW REMARKABLE VARIATIONS IN LEPI-  
 DOPTERA.  
 Can. Ent. XXVI, Oct. 1894, pp. 292-3.  
*Leucartia acræa* var. *klagesii*, var. nov., Western Penn'a.
1895. (11) DESCRIPTION OF THE FEMALE PAPILIO PELAUS  
 FAB. WITH A FEW REMARKS.  
 Ent. News, VI, 1895, pp. 303-4.
- (12) TWO NEW CROCOTAS FOUND IN WESTERN  
 PENNSYLVANIA.  
 Can. Ent., XXVII, 1895, p. 345.  
*Crocota rubricosta*, sp. nov., ♀. Jeannette, Pa.  
*Crocota belmaria*, sp. nov., ♂. Pittsburgh, Pa.
1897. (13) COLEOPTEROLOGICAL NOTES FROM MY  
 BROTHER'S DIARY (BY EMIL C. EHRMANN).  
 Ent. News, VIII, 1897, pp. 168-170.
1899. (14) NOTES ON EASTERN N. A. CYCHRUS.  
 Ent. News, X, 1899, pp. 174-5.
1900. (15) NOTES ON THE DISCOVERY OF PINODYTES  
 HAMILTONI HORN.  
 The Entomological Student, I, pt. 4, 1900, pp. 27-28.
- (16) THE CAPTURE OF PLATYNUS CAUDATUS LEC.  
 AND PLATYNUS LARVALIS LEC. IN WESTERN  
 PENNSYLVANIA.  
 Ent. News, XI, June, 1900, pp. 499-500.
- (17) VARIATIONS IN SOME COMMON SPECIES OF  
 BUTTERFLIES.  
 Can. Ent., XXXII, 1900, p. 348.  
*Papilio asterias*, var. *semialba*, var. nov., ♂. S. W. Penna.

*Papilio philenor*, var. *obsoleta*, var. nov., ♂. S. W. Penna.

*Papilio troilus*, var. *texanus*, var. nov., ♂. Houston, Texas.

*Limenitis ursula*, var. *cerulea*, var. nov., ♀. Charleroi, Pa.

*Vanessa antiopa* (L.) var. *grandis*, var. nov., ♀. S. W. Penna.

(18) NOTES ON COLEOPTERA.

Ent. News, XI, Dec. 1900, pp. 619-622.

1902. (19) NOTES ON COLEOPTERA NO. 2.

Ent. News, XIII, May, 1902, pp. 140-1.

(20) A NEW PAPILIO FROM THE ORIENT.

Ent. News, XIII, Nov. 1902, p. 291.

*Papilio Tahmourath*, sp. nov., ♂. Southern China.

1904. (21) NEW FORMS OF EXOTIC PAPILIONIDÆ.

Ent. News, XV, 1904, pp. 214-5.

*Ornithoptera ritsemæ* var. *tantalus*, var. nov., ♂. N. Borneo.

*Ornithoptera cambyses*, sp. nov., ♂. Colombo, Ceylon.

*Papilio klagesi*, sp. nov., ♀. Suapure, Venezuela.

1907. (22) NEW TROPICAL AMERICAN HESPERIIDÆ.

Can. Ent., XXXIX, Sept. 1907, pp. 317-323.

*Leucochitonea jason*, sp. nov., ♂, ♀. Suapure, Venezuela.

*Leucochitonea janice*, sp. nov., ♂. Suapure, Venezuela.

*Leucochitonea euphemie*, sp. nov., (sex not given), Suapure, Venezuela.

*Pamphila antenora*, sp. nov., ♂. Suapure, Venezuela.

*Pamphila elenora*, sp. nov., (sex not given), Suapure, Venezuela.

*Pamphila theodora*, sp. nov., (sex not given), Suapure, Venezuela.

*Thymele terracina*, sp. nov., ♀. Remedios. U. S. Colombia.

*Thymele viterboana*, sp. nov., (sex not given). Sacorro, U. S. Colombia.

*Thymele guatemalana*, sp. nov., ♂. Guatemala.

*Thymele thiemei*, sp. nov., (sex not given). Honduras.

*Thymele borja*, sp. nov., (sex not given). Bolivia.

*Goniurus triptolemus*, sp. nov., ♀. Costa Rica.  
*Goniurus cleopatra*, sp. nov., ♀. Suapure, Venezuela.  
*Eumesia potomoni*, sp. nov., ♀. Suapure, Venezuela.

## 1909. (23) NEW SPECIES OF EXOTIC LEPIDOPTERA.

Can. Ent., XLI, 1909, pp. 85-87.

*Papilio echo*, sp. nov., ♂. Khasia Hills, Burmah.

*Papilio ikusa*, sp. nov., ♂. Simoda, Japan.

*Papilio potomonianus*, sp. nov., ♂. Upper Congo, W. Africa (*sic*).

*Eudamus boisduvalii*, sp. nov., ♂. Suapure, Venezuela.

*Achylodes heros*, sp. nov., ♂. Suapure, Venezuela.

*Sphingicampa smithii*, sp. nov., ♂. Rio Janeiro.

## 1912. (24) A NEW PAPILIO FROM CENTRAL AMERICA.

Can. Ent., XLIV, 1912, p. 244.

*Papilio chromealus*, sp. nov., ♂. Honduras.

## 1917. (25) SOME NEW NORTH AMERICAN BUTTERFLIES.

The Lepidopterist, I, No. 7, 1917, pp. 54-56.

*Parnassius polus*, sp. nov., ♂, ♀. Pitkin Co., Colorado.

*Argynnis nikias*, sp. nov., ♂. Jemez Springs, N. Mexico.

## 1918. (26) COLLECTING CATOCALÆ AROUND THE NATURAL GAS WELLS.

Lepidoptera, II, No. 2, Feb. 1918, p. 12.

## (27) NEW SPECIES AND VARIATIONS OF BUTTERFLIES.

Lepidoptera, II, No. 3, March, 1918, pp. 21-22; cont. No. 4, April, pp. 29-30.

*Papilio triptolemus*, sp. nov., ♂. Uganda.

*Parnassius smintheus* var. *xanthus*, var. nov., ♂. p. 21.

*Telegonus fabrici*, sp. nov., ♂. Caura Valley, Venezuela.

*Parnassius smintheus* var. *baldus*, var. nov., ♂. Washington. p. 29.

*Parnassius smintheus* var. *montanus*, var. nov., ♂. Colorado. p. 29.

*Parnassius smintheus* var. *verity*, var. nov. Colorado. p. 30.



- (28) Lepidoptera, II, No. 6, 1918, p. 41.  
Name of *P. smintheus*, "var. *xanthus*" corrected to read  
var. *kallias*.

- (29) A MIDNIGHT EXPERIENCE.  
Lepidoptera, II, No. 7, July, 1918, pp. 49-50.

- (30) TWO NEW SOUTH AMERICAN HESPERIDÆ.  
Lepidoptera, II, No. 9, Sept. 1918, p. 66.  
*Spathilipia* (*sic*) [*Spathilepia*] *isocrates*, sp. nov., ♂.  
Suapure, Venezuela.  
*Spathilipia* [*Spathilepia*] *agathocles*, sp. nov., ♂. Suapure,  
Venezuela.

NOTE: *Colias philodice*, ab. *pallidice* Scud., common.

- (31) RARE EXPERIENCES.  
Lepidoptera, II, No. 10, Oct. 1918, pp. 77-78.

- (32) NEW EXOTIC PAPILIOS.  
Lepidoptera, II, No. 11, Nov. 1918, pp. 82-84.  
*Papilio klagesi* Ehrm. ♂ (♀ desc. Ent. News, XV, 1904,  
p. 215).  
*P. chromealus* Ehrm. ♀ (♂ desc. Can. Ent., XLIV,  
1912, p. 244).  
*P. thrasybulus*, sp. nov., ♂. Pará, Honduras (*sic*).  
*P. phormisius*, sp. nov., ♂. Rio de Janeiro.

1919. (33) NEW TROPICAL AMERICAN PAPILIOS.  
Lepidoptera, III, No. 2, Feb. 1919, pp. 10-11; *Cont.* No. 3,  
March, 1919, pp. 21-22.

*Papilio throgenus*, sp. nov., ♂. S. E. Peru.  
*Papilio diotimus*, sp. nov., ♂. Viota, U. S. Colombia.  
*Papilio arnapes*, sp. nov., ♂. Viota, U. S. Colombia.  
*Papilio critobulus*, sp. nov., ♂, ♀. Tucuman,<sup>3</sup> Guate-  
mala.

- (34) A NEW TROPICAL AMERICAN PAPILIO.  
Lepidoptera, III, No. 4, April, 1919, pp. 30-31.  
*Papilio cleostratus*, sp. nov., ♂. Bolivia.

- (35) NEW TROPICAL AMERICAN PAPILIOS.  
Lepidoptera, III, No. 5, May, 1919, pp. 36-38.  
*Papilio metrobates*, sp. nov., ♂. U. S. Colombia.  
*Papilio euryptolemus*, sp. nov., ♀. Trinidad.

<sup>3</sup>There is no place called *Tucuman* in Guatemala, so far as I can ascertain.

- P. ulopus* var. *praxenus*, var. nov., ♂. Honduras.  
*P. antosilaus* var. *multesilaus*, var. nov., ♂. Brazil.
- (36) COLLECTING IN A SILENT CITY.  
 Lepidoptera, III, No. 7, July, 1919, p. 51.
1920. (37) A NEW TROPICAL AMERICAN PAPILIO.  
 Lepidoptera, IV, No. 1, Jan. 1920, p. 13.  
*Papilio pharnabazus*, sp. nov. Venezuela.
- (38) NEW EXOTIC PAPILIOS.  
 Bull. Brooklyn Ent. Soc., XV, 1920, pp. 21-22.  
*Ornithoptera ritsemæ* var. *tantalus* Ehrm. (♀ described),  
 Borneo.  
*Papilio nepenthes*, sp. nov., ♂. S. E. Assam.  
*Papilio mantitheus*, sp. nov., ♂. Uganda.
- (39) A NEW SPECIES OF PIERIDÆ FROM HONDURAS, C. A.  
 Lepidoptera, IV, No. 6, May, 1920, p. 23.  
*Eulerpia lorenza*, sp. nov., ♂. Honduras.
- (40) PAPILIO PYROLOCHUS. NOV. SPEC.  
 Lepidoptera, IV, No. 3, March, 1920, p. 20.  
 Locality, Muzo, U. S. Colombia.
- (41) SOME NEW PARNASSIUS FROM CENTRAL ASIA.  
 Lepidoptera, IV, No. 7, June, 1920, pp. 51-2; *Cont.* No. 8,  
 Aug., pp. 59-61.  
*Parnassius wahlberghi*, sp. nov., ♂, ♀. Tian-Schan.  
*P. wahlberghi* var. *thiseus*, var. nov., ♂. Mts. of Tian-Schan.  
*P. imhovii*, sp. nov., ♂. Nyran, Turkestan.  
*P. goniscus*, sp. nov., ♂. Pamir, Central Asia.
- (42) VARIATIONS IN EXOTIC PAPILIOS.  
 Lepidoptera, IV, No. 12, Dec. 1920.  
*P. rhetenor* Westwood, var., ♂.  
*P. forbesi* Salvin and Godman. (sex not given.)  
*P. hypocrates* Felder, ♀.
1921. (43) NEW EXOTIC PAPILIOS.  
 Lepidoptera, V, No. 1, March, 1921, pp. 2-3.  
*Papilio thyodilus*, sp. nov., ♀. Honduras.  
*Papilio hozaus*, sp. nov., ♂. Costa Rica.

(44) SOME NEW PAPILIOS AND ORNITHOPTERA.

Lepidoptera, V, No. 2, Sept. 1921, pp. 17-19.

*P. morrissi*, sp. nov., ♂. Laja (?Loja?), Peru.

*P. zieglerei*, sp. nov., ♂. Viota, Colombia.

*P. embodinus*, sp. nov., ♂. Uganda.

*P. zimmermanni*, sp. nov., ♂. U. S. Colombia.

*P. melsheimeri*, sp. nov., (sex not given). St. Catherine, S. Brazil.

*P. weinbergi*, sp. nov., ♂. Ceylon.

*Ornithoptera nomis*, sp. nov., ♂. India.

*Ornithoptera magnifica*, sp. nov., ♂. Java.

1925. (45) NEW NORTH AMERICAN BUTTERFLIES.

Bull. Brooklyn Ent. Soc., XX, 1925, p. 84.

*Papilio ehrmanni*, n. ab. of *P. asterias*, ♂. Allegheny Co., Pennsylvania.

*Eurema biedermani*, sp. nov., ♂. Palmerlee, Arizona.

(46) NEW SPECIES OF EXOTIC PAPILIONIDÆ.

Encyclop. Entom., Sér. B., III, Lep. 1, 1925 (Paris) pp. 88-92.

*Ornithoptera resplendens*, sp. nov., Choiseul Island.

*Ornithoptera osiris*, sp. nov., Ceram.

*Ornithoptera isis*, sp. nov., Ceylon.

*Papilio euryptolemus*, ♂, (Cf. Lepidoptera III, No. 5, 1919, p. 37, ♀, Trinidad).

*Papilio lindeni*, sp. nov., ♂, Argentina.

*Papilio adloni*, sp. nov., ♂, Ecuador.

*Papilio eversmanni*, sp. nov., ♂, ♀, Brazil.

*Sericinus ehrmanni*, sp. nov., ♂, ♀, Foo-chow, China.

*Parnassius ehrmanni*, sp. nov., ♂, Ladak, Thibet.

RHOPALOCERA.

PAPILIONIDÆ (North American).

*P. asterius* var. *semialba* Ehrmann, ♂. (Pl. XXV, fig. 1, type.)

*Canadian Entomologist*, XXXII, 1900, p. 348, southwestern Pennsylvania.

The type, which is before me, does not differ materially from normal specimens of the species, except that the submarginal band

of spots on the fore wing is paler yellow, inclining to whitish, but not to a very marked degree.

**P. asterius** ab. **ehrmanni** Ehrmann, ♂, Pittsburgh, Pa. (Pl. XXV, fig. 2, type.)

Bull. Brooklyn Ent. Soc., XX, 1925, p. 84. (Named in honor of A. J. Ehrmann.)

This specimen is a rather undersized male, lacking the light yellow submarginal band of spots on the fore wing, except the upper spot near the costa, the others being very faintly indicated in each case by a few scarcely visible scales. The mesial band on the hind wing is composed of a regularly curved extra-cellular series of quite small spots tinged with orange, and the yellow spot at the outer end of the cell, which appears in normal specimens, is lacking. The form is closely approximated by several specimens in our collections from various parts of the United States, and, except that it lacks the submarginal band of light spots on the forewing, is like the type of *P. curvifascia* Skinner.

I am tempted to make a few remarks at this point in relation to some of the various so-called varieties and aberrations of **P. philoxenes** Fabricius = **asterius** Fabricius.

**P. philoxenes** Fabricius = **asterius** Fabricius.

The insect is very variable, even in the same locality. I have before me hundreds of specimens, representing both sexes, from all parts of the United States, Central America, and the Caribbean Islands, as well as from the British possessions in the north. If I were inclined to do so, I might easily set up half a dozen varieties (so-called), or named aberrations, from the material at hand. But I do not regard such work as being necessary or conducive to scientific ends. However that may be, I wish to state my views as to some of the forms, which already have been named by others, and which have a place in the nomenclature.

**P. asterius** var. **ampliata** Ménétrièrs.

Under this name Ménétrièrs in his *Enum. Corp. Animal. Mus. Petrop.*, pt. II, 1857, p. 99, described a specimen of a variety of *P. asterius* Fabr., which he informs us had been brought from "North America" by Motschulsky. In his description he gives us no information as to the sex of the specimen. I have never seen a male of *P.*



*asterius* which agrees with his description, except a gymandramorph bred by Edwards from a larva obtained in Platte Canyon, Colorado, which specimen is in my possession. In Nov. Zoöl., XIII, 1906, p. 546, Rothschild and Jordan state that "The only instance of the occurrence of a black male similar to the female within the United States we know of is recorded by Edwards, *Can. Ent.*, XXIV, p. 49 (1892), who bred a male of that form from a Colorado chrysalis." This is the specimen just referred to as in the Edwards Collection.

I have, however, examined scores of females from all parts of the United States and Mexico, in which latter country Motschulsky collected, which exactly conform to Ménériès' description. These are the dark females, in which the macular bands of the fore wings are restricted to the row of marginal spots, and the mesial light band of the hind wings is either wholly wanting, as in some of our Mexican specimens; or, as in many specimens from the United States, but faintly indicated, with the exception of the uppermost spot of the series on the costa of the hind wings. On the underside of the secondaries the mesial band of yellow spots is present, generally strongly tinged with orange. We have in our collection such females from Pittsburgh and localities ranging from New England to California and Arizona; and southward as far as Florida, and Chihuahua and Jalapa, Mexico; also from Cuba. I am led to the conclusion that the variety, *ampiata* Ménériès, should be designated in our lists as *ampliata* Mén. dimorphic ♀. The case is analogous to that of several other species of the Papilionidæ in which we have dimorphic females.

#### **P. asterioides** Reakirt.

Reakirt in the Proc. Akad., Nat. Sci. Phila., Vol. XVIII, 1866, p. 331, described *Papilio asterioides*. In his original description he says nothing about the number of specimens which were before him at the time he wrote, nor does he designate the sex of the type. Skinner (Entomological News XIII, 1902, p. 183) declares that the type so marked (I am informed it is a male) "is in the collection of the American Entomological Society and agrees perfectly with Reakirt's description." Strecker's figure does not represent this insect. I am also informed on what I believe is perfectly good authority that there were originally in Reakirt's collection one male and two females associated by Reakirt and coming from the same locality. It is one of these females which Strecker has depicted on his Plate, Lep. Rhop.

Het. 1873, p. 47, Pl. VI, fig. 4. Rothschild and Jordan in Nov. Zoöl. XIII, 1906, p. 541, place Strecker's *P. asterioides* under *P. polyxenes americanus* Kollar. With this allocation of the insect it is difficult to agree. The insect figured by Strecker is, so far as his plate shows, not at all related to the form *americanus*, but is an aberration of *P. polyxenes*, in which the mesial band of the secondaries both on the upper and under sides is wholly extra-cellular. Strecker's insect is matched by specimens which we have in some numbers from southwestern Pennsylvania, and from numerous other localities, as far south as Mexico. It is characterized by having the mesial light band of the secondaries well developed and wholly extra-cellular, yet not curved, as he shows on the plate, and also by having the submarginal band of the primaries present. As Strecker's *P. asterioides* is not *P. asterioides* Reakirt, I propose that the insect shall be designated as *P. asterius streckeri*, ab. ♀.

Wright, Butt. West Coast, 1905, p. 89, Pl. IV, fig. 30, 30b, depicts an insect which he declares is *P. asterioides* (*sic*) Reakirt. In the text, p. 90, he says that figure 30b represents "the under side," and on p. 89 he says that it is not "figured elsewhere in accessible form," and he further informs us that this form is the characteristic form in the coast states west of the Rocky Mountains. I think Wright is in error in stating that his figure 30b represents the "under side" of the specimen. It is the upper side. The female in figure 30b is nothing more or less than *P. ampliata* Mén. The male, figure 30, is a slightly aberrant form of *P. asterius* which might be matched by specimens taken almost anywhere within the limits of the United States.

Rothschild and Jordan, Nov. Zoöl., 1906, p. 546, have discussed the extreme variability of this insect and have grouped the forms under three general heads, the first representing the typical form *asterius* Cram. In this typical group there is large variation in the size and number of the discal spots both in the fore and hind wings, but they all agree in having on the secondaries the tip of the cell marked more or less broadly by yellow and the inner margin of the mesial band more or less straight. In innumerable instances the females in this group bred from the same lot of eggs, belong to the form *ampliata*, which Rothschild and Jordan set aside as the third subdivisional group. Their second group includes the forms which, like *P. var. curvifascia* Skinner, have the mesial bands extra-cellular and forming a curved series. But this group has no stability, as

specimens with the mesial band on the hind wings, having the spots ranged in an extra-cellular curve, can be taken almost anywhere within the range of the species. The third, or *ampliata*-group, as I have pointed out, represents dimorphic females, and some of these dimorphic females, in which the discal band on the upper side of the hind wings is wanting, or more or less obsolete, are found consorting with and breeding to males of the normal forms or of the so-called *curvifascia*-group, as well as the first group.

With hundreds of specimens before me from all points of the compass, and with multitudes of bred specimens collected in Pittsburgh, where *P. polyxenes* is the commonest of all our Papilios, I am quite certain that to attempt to mark out distinct races and to claim that anyone of them is characteristic of a given locality, is a procedure, which, except in a few cases, is scarcely possible. The butterfly is in a state of flux, as Rothschild and Jordan have intimated. I might cover several plates with figures which would show variant forms, which some of the sharp-eyed workers in entomology, who are multiplying descriptions of varieties, would seize upon as subspecies or aberrations to be named. The presence or absence of a lunule in the red spot at the anal angle, the more or less partial obsolescence of the discal band on either the primaries or the secondaries, the absence or presence of a yellow spot at the end of the discal cell of the primaries or secondaries, the tint of the spots, sometimes pale yellow inclining to whitish, sometimes deep yellow, sometimes orange, all furnish opportunities for nomenclatorial activity, which I for one am inclined to deprecate. The separation by such minor distinctions into so-called species, varieties, or aberrations, is as futile an undertaking as was the labor of one of our noted botanists, who some years ago described many hundreds of species of *Cratægus*, a large proportion of which were represented by individual bushes growing here and there, some in the parks of Pittsburgh. To these trees or bushes he took the pains to affix labels, giving the name and marking on the label, "Type." The species were distinguished by slight variations in the size and the lobulation or indentation of the leaves. Some were founded upon the leaves of branches near the top, others near the bottom of the same tree. Many of these plants—the "types"—have since died, or been cut down, followed necessarily by the total extinction of the "species." *Ad quem finem sese effrenata jactabit vis discriminationis!*

**P. asterius alunata** Skinner.

This is an aberration, caught in Fairmount Park, Philadelphia. It is closely matched by a specimen we have from Tucson, Arizona. It is only one of the many freaks which occur in this exceedingly variable species.

**P. asterius** var. **americus** Kollar.

This is the predominant form in northwestern South America, but is occasionally found far north of its metropolis. That this form, or something closely resembling it, occasionally occurs as a "sport" in Arizona, has been demonstrated by Barnes and McDunnough Cont. N. H. Lep. N. A., III, 1916, p. 53, pl. IV, fig. 1. There is no reason whatever for casting doubt, as is done by Rothschild and Jordan on the correctness of the label attached to the insect described and figured as *P. americanus* Kollar by Edwards, Butt. N. A., III, pl. III. The specimen is in my possession, bearing the original label in the handwriting of W. H. Edwards, stating that it was obtained in "Arizona, Wheeler Expedition." It is accompanied by a good suite of *P. americanus* Kollar, from Colombia and Ecuador, which also are a part of the Edwards Collection. Edwards points out that the specimen he described and figured is a trifle paler (especially on the underside) than typical specimens from S. America, but that otherwise there is no difference. *P. sadalus* Lucas is very properly sunk by Rothschild and Jordan as a synonym of *P. americanus*.

**P. philenor** var. **obsoleta** Ehrmann, ♂, S. W. Pa. (Pl. XXV, fig. 9, type.)

Can. Ent., XXXII, 1900, p. 342.

The type is a somewhat dwarfed male, in which the submarginal pale spots are almost obliterated, though visible upon close scrutiny. This specimen is matched in our collections by one from Stemper, near Lutz, Florida, and by one from Bartlesville, Oklahoma. The latter example shows far less of the submarginal pale spots than Ehrmann's type, though by placing the insect in certain lights the existence of the pale spots, represented by a few pale scales, is evident.



**P. troilus** var. **texanus** Ehrmann, ♂. (Texas, *errore*), Florida.

Can. Ent., XXXII, 1900, p. 348.

As has already been pointed out by Barnes and McDunnough, (Cont. N. H. Lep. N. A., IV, No. 2, p. 61) this is the form of *P. troilus* named and figured by Abbot and Smith as *P. ilioneus* in 1797. I have been informed by my associate, Mr. Henry Klages, that Mr. Ehrmann repeatedly told him that he had given the locality "Texas" to his type in error. I have never seen a specimen of *P. var. ilioneus* from Texas in any collection. It occurs in lower Georgia along the coast and in eastern Florida and abundantly in the neighborhood of Miami. I have never received it from those who have collected for me in Alabama, Mississippi, Louisiana, and Texas. Even from the western coast of Florida all the specimens of *P. troilus* which we have received have been of the normal form. It may occur in Texas on the gulf coast, but we have no evidence, so far as I am aware, that it does. To the best of my knowledge and belief it is restricted in its range to the semitropical parts of the Atlantic seaboard in lower Georgia and eastern and lower Florida.

#### PAPILIONIDÆ (African).

**P. embodinus** Ehrmann, ♂, Uganda.

Lepidoptera, V, No. 2, Sept. 1921, p. 18.

This is a variety of *P. hesperus* Westw., characterized by a small light spot between veins 4 and 5 of the anterior wing, near the outer margin. It is the form figured as *P. hesperus* in Seitz' *Gross-Schmett. d. Erde*, Vol. XIII, Pl. 4b. The figure given by Seitz does not agree in this small particular with the figure given by Westwood, *Arcana Ent.*, I, 1845, Pl. 48. The aberration named *maculatissimus* by Suffert has an equally small spot, but located differently, near the end of the cell and in line with the broad band of discal spots, and besides has a spot of medium size not far from the outer end of space 2 of the hind wing. With more than a hundred specimens of *P. hesperus* before me, I might set up several varietal names, but, not being afflicted with what has been called the "Mihi-itch," I refrain.

As matters stand the future reviser of the nomenclature of the

African Papilionidæ would have in the case of this species to begin as follows:

*P. hesperus* WESTWOOD, Arc. Ent., I, 1845, p. 189, Pl. 48.

var. *maculatissimus* SUFFERT, Iris, XVII, 1904, p. 95.

var. *embodinus* EHRMANN, Lepidoptera, Vol. V, No. 2, Sept. 1921, p. 18, =

*P. hesperus* SEITZ, Gr.-Schmett., XIII, 1908, p. 16, Pl. 4b.

I omit all the references, which fall into the list between Westwood and Suffert.

**P. mantitheus** Ehrmann, ♂, Uganda. (Pl. XXV, fig. 7, type.)

Bull. Brooklyn Ent. Soc., XV, 1920, p. 22.

The type represents a slight variety of *P. nireus* Linnæus, in which the outer margin of the bluish green mesial band of the secondaries is quite straight and attenuated near the tail, while in the ordinary run of specimens this band tends to be concave on the outer side and more broadly expanded and bifid near the tail. Otherwise I can detect no appreciable difference from scores of specimens, which are before me. It is possibly intermediate between *P. nireus* and *P. lyæus*.

**P. potomonianus** Ehrmann, ♂, French Congo (? Liberia).

Can. Ent., XLI, 1909, p. 86.

A careful and painstaking examination of the type fails to show the slightest difference from typical specimens of *P. latreillanus* Godart, of which it is a pure synonym. The locality published is, I think, in error. The type locality of *P. latreillanus* is the Gold Coast. We never have received it from the French Congo or the southern parts of Cameroun, where it is replaced by the form *theorini* Aurio. Ehrmann received a good deal of material from Liberia, and I suspect that this specimen came from that part of the West African coast.

**P. triptolemus** Ehrmann, ♂, Uganda. (Pl. XXIX, fig. 5, type.)

Lepidoptera, II, No. 3, March, 1918, p. 21.

The type represents a slight varietal form of *P. cynorta* Fabr., characterized by the greater width of the white bands upon both the primaries and secondaries, particularly the latter, and by the slightly larger size of the two upper spots, which terminate the white band of the primaries near the apex. On the under side the type agrees

thoroughly with what we regard as typical *P. cynorta*, which was first figured by Westwood, *Arcana Ent.* I, 1845, p. 151, Pl. 40, figs. 3, 4. The locality "Uganda" given by Ehrmann needs verification.

PAPILIONIDÆ (Neotropical).

**P. adloni** Ehrmann, ♂, Eastern Ecuador.

*Encyclop. Entom.*, Sér. B, III, Lep. 1, 1925 (Paris) p. 90.

The type, which is unique, is an ordinary male of *P. philetas* Hew., and *P. adloni* Ehrmann sinks as a synonym of *P. philetas*.

**P. arnapes** Ehrmann, ♂, U. S. Colombia.

*Lepidoptera*, III, No. 3, March, 1919, p. 21.

The type appears to be a smallish specimen of *P. agesilaus* Boisid., var. *conon* Hewitson, *Trans. Ent. Soc. Lond.*, Ser. II, Vol. II, 1854, p. 246, Pl. XXII, fig. 3. It agrees both with the description and the figure given by Hewitson.

**P. autosilaus** var. **multesilaus** Ehrmann, ♂, Ega, Brazil.

*Lepidoptera*, III, No. 5, May, 1919, p. 38.

The type is a perfectly typical specimen of *P. agesilaus* Guérin and Percheron.

**P. chromealus** Ehrmann, ♂, ♀, Honduras. (Pl. XXVII, fig. 5, ♀; fig. 6, ♂, types.)

♂, *Can. Ent.*, XLIV, 1912, p. 244.

♀, *Lepidoptera*, II, No. 11, Nov. 1918, p. 83.

Judging from the figure of the female type of *P. copanæ* Reakirt, given by Strecker, *Lep. Rhop. et Het.*, 1874, p. 61, Pl. VIII, fig. 1, and the figures of the male and female of the same species given by Salvin and Godman, *Biol. Cent. Amer., Rhop.*, Vol. III, 1894, Pl. 66, figs. 4-6, this is a form rather distinct from typical *P. copanæ* Reakirt, and worthy at all events of varietal rank.

The submarginal spots of the upper side of the fore wings are alike in both sexes, being obscurely defined, pale whitish green, the two uppermost elongated basad; on the under side these spots are more distinctly white, sharply defined, bifid at their outer extremities, and

the uppermost continued basad by a small white spot at the lower outer angle of the cell. There are no traces of submarginal light spots on the hind wings, which are conspicuous in the type of *P. copanæ*, and appear also in the figures given by Godman and Salvin. On the under side of the secondaries the submarginal spots are deep crimson as in *P. copanæ* and allied forms. The band of discal spots in both sexes on the upper side of the hind wings lies wholly without the cell. In the male this band is quite different from the band as seen in *P. copanæ*. The upper spot nearest the costa is large, whitish, extending inwardly for two-thirds the length of the costa, and it is narrowly marked on its lower edge by olive-chrome. The four spots which succeed this large whitish spot are deep olive-chrome, gradually decreasing in width downwardly. Succeeding these spots, which are quadrate in outline, between the first and second median nervule, is a small pale greenish gray spot, oval in form, and succeeding this, above the curvature of the inner angle are two quite minute spots of the same color as the oval spot. In the female the large white spot which is a marked feature of the upper side of the secondaries of the male is wanting, being only represented by a small circular greenish gray spot, while the discal band is composed of similarly colored elongated spots, the two beyond the end of the cell being the longest, those on either side of these diminishing in length in either direction above and below.

**P. cleostratus** Ehrmann, ♂, Bolivia, Santa Cruz de la Sierra. (?locality.) (Pl. XXVII, fig. 4, type.)

Lepidoptera, III, No. 4, April, 1919, p. 30.

The type, which is a male, is a slight variety of *P. anchises*, var. *osyris* Felder, the green band of discal spots having the normal outline, but the two upper spots being both yellow, without any green upon them.

The statement that the specimen is from "Santa Cruz de la Sara, (*sic*) Bolivia" is I think a mistake. At all events our collector, Mr. José Steinbach, who has sent us vast numbers of Papilionidæ from that locality, has never sent us any specimens of *P. anchises* var. *osyris* Felder. The insect according to all the authorities and according to our own experience is Venezuelan. Some error in labelling the specimen was, no doubt, made by Ehrmann, who, as we well know, was not always as exact in this regard as he should have been.



The female, which Mr. Ehrmann associated in his collection with the male, but which is not mentioned in his original description, is a female of *P. mylotes*, Bates, a Nicaraguan insect, with red, not white, fringes, and belonging to quite another group than that of *P. anchises*.

**P. critobulus** Ehrmann, ♂, ♀, Tucuman (*sic*), Guatemala.

Lepidoptera, III, No. 3, March, 1919, p. 22.

The original description says that "the antennæ, thorax, and abdomen are red." This is an error. There are a few red spots on the lower side of the thorax and abdomen and, as is usual in this group, the tip of the anal segment is clothed with red scales.

We have a male specimen from Limon, Costa Rica, collected by Schaus, to which he has given the name *P. lycimenes* Bois., which corresponds almost exactly with the male type of *P. critobulus* Ehrmann. The only difference which can be detected is the presence in the male of *P. critobulus* of a very small white spot at the outer end of the cell in the fore wing, which spot enters into the white patch, which marks the wing at this point, the other spots being extracellular.

The female associated by Ehrmann with the male in his description appears to belong to an entirely different group, and seems to be a quite normal female of *P. mylotes* Bates. The locality given in the original description is manifestly in error. To the best of my knowledge and belief there is no such place as "Tucuman" in Guatemala. The insect very probably came from Guatemala. It could not have come from Argentina, the ancient capital of which is Tucuman. All of the Papilionidæ belonging to this group are either Central American, or have their habitat in northern South America.

**P. diotimus** Ehrmann, ♂, U. S. Colombia.

Lepidoptera, III, No. 2, Feb. 1919, p. 10.

This insect is identical with *P. protesilaus*, var. *dariensis* Rothschild and Jordan (*Cf.* Nov. Zoöl., XIII, 1906, p. 716).

**P. euryptolemus** Ehrmann, ♀, Trinidad. (Pl. XXIX, fig. 3 ♂; fig. 4 ♀.)

Lepidoptera, III, No. 5, May, 1919, p. 37, ♀.

Encyclop. Entom., Sér. B., III, Lep. I, 1925 (Paris), p. 89, ♂.

The type is a female, unique. The original description is accurate.

It is very near *P. lycimenes paralius* R. & J., Nov. Zoöl., XIII, 1906, p. 474, Pl. VI, fig. 31, but differs slightly. The male, which Ehrmann at a later date associated with the female, does not belong in the same group, having pink fringes. Both specimens are labelled as from Trinidad, but we cannot be sure of the localities. The male is without doubt not that sex of the species, but is a slight variety of *P. arcas* Cramer, in which the red band of the secondaries is produced costad by a small red spot.

**P. eversmanni** Ehrmann, ♂, ♀, Paraná, Brazil.

Encyclop. Entom., Sér. B., III, Lep. I, 1925 (Paris), p. 90.

The male is a specimen of *P. anchises alyattes* Felder; the female is that sex of *P. mylotus* Bates. The author has made two synonyms in describing this so-called species.

**P. hozaus** Ehrmann, ♂, Costa Rica.

Lepidoptera, V, No. 1, March, 1921, p. 3.

A variety of *P. lycophron* Hübn., closely resembling the form named *hippomedon* Felder. It is also close to the form named *P. lycophron phanias* Rothschild and Jordan. The small linear spot immediately before the apex of the fore wing, which appears in typical *P. lycophron* is lacking, and the submarginal series of spots on the fore wing is indicated.

**P. lindeni** Ehrmann, ♂, Mendoza, Argentina.

Encyclop. Entom., Sér. B., III, Lep. I, 1925 (Paris), p. 90.

The type is a specimen of *P. archidamas* Boisd. The name *lindeni* is a pure synonym. The occurrence of the species among the foot-hills of the eastern uplift of the Andes in Argentina may not be improbable, but, so far as my knowledge extends, it has hitherto only been recorded from Chili.

**P. klagesi** Ehrmann, ♀, Caura River, Venezuela.

♀, Ent. News, XV, 1904, p. 215.

♂, Lepidoptera, II, Nov. 1918, p. 82.

Rothschild and Jordan, Nov. Zoöl., XIII, p. 453, pl. V, fig. 20, have recognized *P. klagesi* Ehrmann, as a valid species. Ehrmann

(Lepidoptera II, p. 82) has associated with his female type a male from the same locality, which undoubtedly is a small male of *P. neophilus ecbolius* Rothschild and Jordan. This association I regard as incorrect, and think that the male of the species remains to be discovered. The fringes of the hind wings in Ehrmann's type are black, whereas in *P. neophilus* they are partly pink. *P. vertumnus* var. *yurucare* Rothschild and Jordan, ♀, in the disposition of the spots composing the discal band of the hind wings, recalls *P. klagesi*, but has the fringes partly white. The white patch of the fore wings in *P. klagesi* Ehrmann is restricted to interspaces 1 and 2.

^ ***P. melsheimeri*** Ehrmann, ♂, Southern Brazil.

Lepidoptera, V, No. 2, Sept. 1921, p. 19.

Ehrmann in his description fails to designate the sex of the type, but, as in his description he refers to the white scent-organs on the inner fold of the primaries, the type must be the male, which he designates as the type upon his label.

The insect is very close to, and apparently identical with, *Papilio erlaces* Gray. The female associated with the male in the collection is that sex of *P. nephalion* Godart.

^ ***P. metrobates*** Ehrmann, ♂, U. S. Colombia. (Pl. XXVII, fig. 2, type.)

Lepidoptera, III, No. 5, May, 1919, p. 36.

There are three specimens in the collection, two of which are labelled as types, both agreeing with the original description, the third being more like the form named *nymphius* R. & J. Rothschild and Jordan (Nov. Zoöl., XIII, 1906, p. 612) set up *P. nymphius* as a variety of *P. rhodostictus* Butler and Druce, (P. Z. S., 1894, p. 364). The variety *nymphius* is characterized by the absence on the upper side of the primaries of the patch of white spots, which is conspicuous in typical *P. rhodostictus*, but which is found only on the under side of the wings in *P. nymphius*. In *P. metrobates* Ehrmann this white patch is lacking on both the upper and under side of the primaries. Moreover, the transverse band of light spots on the secondaries in *P. metrobates* is composed of maculations much smaller in size than is the case in *P. rhodostictus* Butler and Druce, or in *P. var. nymphius* R. & J. The varietal character of *P. nymphius* R. & J. may be questioned. Mr. Avinoff, who has in recent time been making a

critical study of the neotropical *Papilionidæ* in our collections, has suggested to me that *P. nymphius* R. & J. should be raised to specific rank, and that *P. metrobates* Ehrmann should be accepted as a variety. At all events *P. metrobates* Ehrmann is a valid varietal form, allied to *P. rhodostictus*, and closely related to *nymphius* R. & J., but differing from it. If the decision of Rothschild and Jordan be allowed to stand, the synonymy would work out as follows:

*P. rhodostictus* BUTLER and DRUCE, 1894.  
 var. *nymphius* ROTHSCHILD and JORDAN (1906).  
 var. *metrobates* EHRMANN (1919).

If Avinoff's suggestion be accepted, the synonymy would be:

*P. nymphius* ROTHSCHILD and JORDAN (1906).  
 var. *metrobates* EHRMANN (1919).

**P. morrissi** Ehrmann, ♂, Peru. (Pl. XXVII, fig. 3, type.)

Lepidoptera, V, No. 2, Sept. 1921, p. 17.

The type and two paratypes are in the Ehrmann Collection. They are very close to *P. xeniades* Hewitson, which by Rothschild and Jordan has been treated as a varietal form of *P. harmonidius* Doubleday. They are also very near to the female form, which has been described and figured by the authors just cited as a dimorphis form of *P. harmonidius* under the varietal name *androna* (Cf. Nov. Zoöl., XIII, 1906, p. 668, pl. V, fig. 18). There is no trace on the upper side of the wings of the white marginal bars, though they are well marked on the under side.

**P. pelaus** Fabricius, ♀, Jamaica.

Ehrmann, Ent. News, VI, 1895, p. 345.

The description of the female of this well known Jamaican insect calls for no critical comment.

**P. pharnabazus** Ehrmann, ♂, Venezuela.

Lepidoptera, IV, No. 1, Jan. 1920, p. 13.

This appears to be a slight variety of that form of *P. phaon* Boisd., to which Butler gave the name *metaphaon*. (Cf. Butler, Trans. Ent. Soc. Lond., 1874, p. 434, and R. & J., Nov. Zoöl., XIII, 1906, p. 662).

• **P. phormisius** Ehrmann, ♂, Rio de Janeiro.

Lepidoptera, II, No. 11, Nov. 1918, p. 84.

The type of this species appears to agree in all respects with *P. sadyattes* Druce, Ent. Mo. Mag., XI, 1874, p. 36. This form was described by Druce from Costa Rica, whence we have specimens collected and determined by Mr. William Schaus, with which the type of *P. phormisius* corresponds in all respects. The name *phormisius* therefore sinks as a synonym of *P. sadyattes* Druce. The locality, "Rio de Janeiro," given by Ehrmann, is open to question.

• **P. pyrolochus** Ehrmann, ♂, U. S. Colombia.

Lepidoptera, IV, No. 3, March, 1920, p. 20.

This is the form of *P. phaon* Boisd., which was named *P. therodamas* by Felder and figured in the *Novara Reise, Lepidoptera*, Pl. X, fig. e.

• **P. theogenus** Ehrmann, ♂, S. E. Peru.

Lepidoptera, III, No. 2, Feb. 1919, p. 10.

A careful examination of the type and comparison with the abundant material in our collections shows that there is no appreciable difference between *P. theogenus* Ehrmann and typical specimens of *P. glaucolaus* Bates. We have a specimen of *P. glaucolaus* from Peru, which exactly matches the type of *P. theogenus* Ehrmann, and does not differ from specimens of the same variety from various parts of Central and northwestern South America. The synonymy is as follows:

*P. glaucolaus* BATES, Ent. Mo. Mag. I, 1864, p. 4.

*P. theogenus* EHLMANN, ♂, Lep. III, No. 2, Feb. 1919, p. 10.

• **P. thrasybulus** Ehrmann, ♂, Pará, Brazil. (Pl. XXVII, fig. 1, type.)

Lepidoptera, II, No. 11, Nov. 1918, p. 84.

The type somewhat closely corresponds to specimens in our collections identified as *P. anchises* Linnæus, var. *osyris* Felder. However, the two green spots, lying respectively between veins 1 and 2 and veins 2 and 3, are narrower than is the case in any of the series of *P. var. osyris*, which we possess, and decidedly narrower than in any specimens of *P. anchises*, which we have seen in nature or which are



figured; moreover, the third or uppermost spot in the ascending series of discal markings is a narrow, almost perpendicular, yellowish white spot between veins 3 and 4, very sharply and distinctly defined. The green spots below this narrow pale spot show no trace of lighter color upon them. *P. thrasybulus* Ehrmann appears to be a variety of *P. anchises* Linnæus. The synonymy is therefore as follows:

*P. anchises* LINNÆUS, Mus. Ulr., 1764, p. 191.

var. *osyris* FELDER, Wien. Ent. Monatsch, V, 1861, p. 74; Nov. Reise, Lep. 1865, p. 30, pl. 9, figs. b-d.

var. *thrasybulus* EH RMANN, Lepidoptera, II, No. 11, Nov. 1918, p. 84.

***P. thylo dilus*** Ehrmann, ♀, Honduras.

Lepidoptera, V, No. 1, March, 1921, p. 3.

This so-called species is a synonymy of *P. photinus* Doubleday, Ann. Mag. N. H., XIV, 1844, p. 415.

The fact that the carmine spots of the outer row in the secondaries are a trifle larger than in the ordinary run of specimens does not seem to justify specific differentiation.

***P. ziegleri*** Ehrmann, ♂, U. S. Colombia.

Lepidoptera, V, No. 2, Sept. 1921, p. 18.

The type appears to be identical with *P. harmodius halex* Roths. & Jord., Nov. Zoöl., XIII, 1906, p. 667, pl. VIII, fig. 52. Both the description and the figure given by Rothschild and Jordan agree exactly with the specimen.

***P. zimmermanni*** Ehrmann, ♂, Onaca, U. S. Colombia.

Lepidoptera, V, No. 2, Sept. 1921, p. 18.

*P. zimmermanni* Ehrmann is a synonym for *P. zagreus* Doubleday, of which we possess a long series. The differences pointed out by Ehrmann as existing in his type are too insignificant to be taken into consideration, and his original description is apparently in error where he says: "The black in the fore part of the discal cell is almost gone." There is as much black at this point in his type as is revealed in the ordinary run of specimens.

**P. ulopus** var. **praxenus** Ehrmann, ♂, Honduras.

Lepidoptera, III, No. 5, May, 1919, p. 37.

*P. praxenus* Ehrmann is a specimen of *P. phaon* Boisd., in which the submarginal row of spots on both the fore and the hind wings tends to obsolescence. *P. phaon*, of which *P. ulopus* is a synonym, is a very variable creature, and to set up varietal forms, because of a spot more or less, is simply learned trifling.

#### PAPILIONIDÆ (Oriental).

**P. echo** Ehrmann, ♂, Khasia Hills, Burmah.

Can. Ent., XLI, 1909, p. 85.

The type is a specimen of *P. boötes* Westwood, Ann. Mag. Nat. Hist., IX, 1842, p. 36; Arc. Ent., I, 1845, p. 123, pl. 39. There is nothing whatever to distinguish it from the typical form.

**P. ikusa** Ehrmann, ♂, Simoda, Japan.

Can. Ent., XLI, 1909, p. 85.

A small specimen of *P. alcinous* Klug. It represents the dark form of *P. alcinous*, which occurs in the summer months, especially in Kiu-siu. It is figured in Seitz, Gross-Schmett. d. Erde, I, pt. 1, 1906, p. 9, pl. 2b, as *P. alcinous, forma æst.* I can see no difference between the type of Ehrmann and the figure given in Seitz, except that the tail of the hind wing in Ehrmann's type is a trifle slenderer. The type is a dwarf. The name *ikusa* Ehrmann will probably stand as that of the summer race of this insect. I have a long series, which I collected in Japan in 1887.

**P. nepenthes** Ehrmann, ♂, S. E. Assam.

Bull. Brooklyn Ent. Soc., XV, 1920, p. 22.

A typical specimen of *P. philoxenus* Gray, (Zoöl. Misc., 1831, p. 32). The female in the collection is also a typical female of *P. philoxenus*.

**P. tahnourath** Ehrmann, ♂, Southern China.

Ent. News, XIII, 1902, p. 291.

The type is a unique specimen of the variety of *P. agestor*, named and described by Leech as var. *restrictus* (Cf. Leech, Butt. China,

Japan, and Corea, Part II, 1893, p. 557, pl. XXXV, fig. 5). It is also figured in Seitz, Gross-Schmett. d. Erde, Vol. I, pl. 7b.

**P. weinbergi** Ehrmann, ♂, Ceylon.

Lepidoptera, V, No. 2, Sept. 1921, p. 19.

A somewhat dwarfed specimen of *P. parinda* (Moore) Lep. of Ceylon, I, 1880-81, p. 148, pl. 60, figs. 1 a-b. The type, which is unique, shows a tendency to the enlargement of the dark oval spots on the disk of the secondaries, and to an increase in the width of the dark outer band on the secondaries, but otherwise there is nothing to distinguish it from the insect figured by Moore, which is the Ceylonese race of *P. polymnestor* Cram. It is at best only a very slight variety of *P. polymnestor parinda* Moore.

#### Genus ORNITHOPTERA.

**O. cambyses** Ehrmann, ♂, Colombo, Ceylon. (Pl. XXVI, fig. 1, type.)

Ent. News, XV, 1904, p. 214.

The type is an aberrant male of *O. darsius* (Gray), in which toward the lower ends of the yellow spots of the hind wings on interspaces 2, 3, 5, 6, and 7 there are small black spots, of which the lower and the uppermost are the largest. Rothschild and Jordan, Nov. Zoöl., II, p. 203, state that "the posterior mark includes sometimes a minute black spot." In this individual all of the yellow marks, except that on interspace 4, have such spots, those on the right wing being a little more distinct than those on the left wing. The synonymy is as follows:

*Papilio darsius* GRAY, Cat. Lep. B. M., I, p. 5, No. 11 (1852) Ceylon.

*Ornithoptera darsius* var. *cambyses* EHRMANN, Ent. News, XV, 1904, p. 214, Ceylon.

**Ornithoptera isis** Ehrmann, ♂, Ceylon.

Encyclop. Entom., Sér. B., III, Lep. 1, 1925, p. 89.

The type is a male specimen of *O. darsius* Gray (Cat. Lep. Ins. B. M., I, 1852, p. 5). I can find nothing in the specimen to differentiate it from that species, of which the name is a synonym.

**O. magnifica** Ehrmann, ♂, Java. (Pl. XXVI, fig. 2, type.)

Lepidoptera, V, No. 2, Sept. 1921, p. 19.

The type is a variety of *O. amphrysus* (Cram.), in which the hind wings have the longish submarginal spot near the anal angle of the secondaries enlarged more than is the case in normal specimens, and produced basad, a moderately large round spot in interspace 2, a small spot in interspace 3, and a similar spot in interspace 5. Otherwise the type does not differ from typical examples of *amphrysus* ♂. The synonymy is as follows:

*O. amphrysus* CRAMER, Pap. Exot., III, p. 43, pl. 219, fig. A, 1782, Java.var. *magnifica* EHRMANN, ♂, Lepidoptera, V, No. 2, Sept. 1921, p. 19, Java.**Ornithoptera osiris** Ehrmann, ♂, Ceram.

Encyclop. Entom., Sér. B., III, Lep. 1, 1925, p. 88.

The type is identical with *O. papuensis* Wallace. (See Rippon, Icon. Ornithop., II, 1893, pl. 45, fig. 3a-b.)

**Ornithoptera resplendens** Ehrmann, ♂, ♀, Choiseul Island, Solomon Group. (Pl. XXX, fig. 1, ♂; 2, ♀.)

Encyclop. Entom., Sér. B., III, Lep. 1, 1925, p. 88.

The insects, the types of which I figure upon Plate XXX, are probably close to, if not identical with, that form of *Ornithoptera victoriæ*, to which Rothschild gave the varietal name *isabella*. Both are labelled as from Choiseul Island, the female being said to have been collected by Meek.

**O. nomis** Ehrmann, ♂, S. E. India.

Lepidoptera, V, No. 2, Sept. 1921, p. 19.

The type, a male, does not seem to afford any reason for separating it from *O. minos*, with which the author compares it. It agrees with the figure of *O. (Pompeoptera) minos* given by Rippon, Icones Ornith., pl. 47, figs. 1 and 2, in every respect, and with specimens named *minos* in our collections.

**O. ritsemæ** var. **tantalus** Ehrmann, ♂, Kala Bula Hills (*sic*) [Kinalu Mt.], N. Borneo.

Ent. News, XV, 1904, p. 214, ♂.

Bull. Brooklyn Ent. Soc., XV, 1920, p. 21, ♀.

The type is a well marked specimen of the insect originally named

*Ornithoptera amphrissius*, ab. *cuneifera* by Oberthür, Études d'Ent., IV, 1879, p. 110, of which *O. ritsemæ* Snellen is a synonym, according to Rothschild and Jordan, Nov. Zoöl., II, 1893, p. 229. The insect is well figured in Rippon's Icones, II, 1907, pl. 52a, figs. 1 and 2. Oberthür gives Java as the habitat of his type specimen. Ehrmann states that his specimens, male and female, were received from Waterstradt, who collected them in North Borneo. The female associated with the male in the Ehrmann Collection agrees perfectly with the figure of that sex given by Rippon.

If there be no error in the locality cited by Ehrmann this form has a wider distribution than has generally been supposed to be the case, but unfortunately too much reliance cannot be placed upon the localities given by Ehrmann in his text and upon his labels. The synonymy is as follows:

*O. amphrysus* ab. *cuneifera* OBERTHÜR, Ét. d'Ent., IV, 1879, p. 110.

*O. ritsemæ* SNELLEN, Notes Leyd. Mus., 1889, p. 153.

*O. ritsemæ* var. *tantalus* EHRMANN, Ent. News, XV, 1904, p. 214, ♂.

*O. ritsemæ* var. *tantalus* EHRMANN, Bull. Brooklyn Ent. Soc., XV, 1920, p. 21, ♀.

## THE PARNASSIIDÆ OF THE EHRMANN COLLECTION.

By A. AVINOFF.

### PARNASSIIDÆ (North American).

***Parnassius montanus*** Ehrmann, ♂, ♀, Bullion Peak, Colorado.

Lepidoptera II, No. 4, April, 1918, p. 29.

♂. Identical with *P. smintheus* D. & H., var. *sayi* W. H. Edwards. Closely corresponding with the figure given by Edwards, Butt. N. A., I, Parnassius, Pl. II, upper figure, which well agrees with the specimen, still preserved in the Holland Collection, from which the drawing was made. The type, ♂, of *P. montanus* in the Ehrmann Collection has a well developed dark zig-zag antemarginal band on the front wings, which is a characteristic, though not absolutely constant, feature of *P. s.* var. *sayi*, as is shown by the typical series contained in the Collection of W. H. Edwards. The material in the Carnegie Museum, other than that in the Edwards Collection, shows likewise the variability in this respect, which prevails between individuals of *P. smintheus*, var. *sayi* Edw.

♀. The female type of *P. montanus* Ehrmann corresponds closely



with typical specimens of *P. sayi*, ♀, in the Edwards Collection, only differing from the figure given of that sex by Edwards (*l. c.*) in having a black spot on interspace 2 of the hindwing. This is a purely accidental and immaterial character, which varies to a marked degree in all this group of the genus *Parnassius*, and is not constant in the specimens of *P. smintheus*, var. *sayi*, in our collections, some being with it, and some without it. *P. montanus* Ehrmann is a synonym for *P. smintheus* var. *sayi* Edwards.

**P. xanthus** Ehrmann, ♂, ♀, Moron (*sic*) Idaho. (Moscow, Idaho, on labels.)

Lepidoptera II, No. 3, March, 1918, p. 21.

The types, male and female, must be identified with *P. smintheus* var. *sayi* Edwards. \*

♂. The male has a somewhat less accentuated antimarginal band of dark maculations than the butterfly described as *P. montanus* by Ehrmann, but is well within the limits of variation shown in the suite of typical specimens of *P. var. sayi* preserved in the Collection of W. H. Edwards and owned by Dr. W. J. Holland. The "creamy white" coloration is in no way remarkable or conspicuous, when compared with the ground-color of other species of *Parnassius*, and reveals no trace of *yellow*, implied in the use of the specific name *xanthus*.

♀. Very closely corresponding to the female type of *P. smintheus* var. *sayi* Edwards, as figured by him (*l. c.*) and as shown by the specimen itself, which is preserved in the Edwards Collection. There is a dark transverse discal band on the front wings, as is shown in the figure of *P. smintheus* from Colorado, represented by Verity (*Rhopalocera Palearctica*, Pl. XVI, fig. 19). This band is a common and variable character in all of the allied species of this group.

**P. polus**\* Ehrmann, ♂, ♀, Ashcroft, Pitkin County, Colorado.

Lepidopterist, I, No. 7, May, 1917, p. 54.

Described by Ehrmann from a pair. His collection contains an additional male, also marked "type." All three are diminutive or dwarfed specimens of *P. smintheus* var. *sayi* Edwards.

\*Misspelt "*pholus*" B. & B. in List Diurn. Lep. N. A., 1926, p. 6.

♂. The male type has two red ocelli beyond the median cell of the fore wings near the superior margin. The third specimen, a male, also labelled "type," has three ocelli. The hind wings have some vestiges of dark antemarginal maculations, which are absent in typical *P. smintheus*, as figured by Doubleday and Hewitson, but which are characteristic of var. *sayi*. Diminutive size prevails among specimens of alpine habitat, as has been stated by Edwards and other writers. This tendency to reduction in size is marked in some of the specimens from Bullion Peak in the collection of the Carnegie Museum.

♀. The female is somewhat melanotic, with a suffusion of dark scales, as is usually the case with females of dwarfed alpine specimens (Cf. Barnes and McDunnough, Cont. to Nat. Hist. Lep. N. A., Vol. III, No. 1, 1916, p. 55). If a name must be attributed to these alpine specimens, of which, however, there are all manner of intergrading forms, as shown by our material, we may preserve the name *polus* Ehrmann, to designate the high alpine race of *P. smintheus* var. *sayi* Edwards. *P. polus* Ehrmann is then a sub-variety of var. *sayi* Edwards.

**Parnassius verityi** Ehrmann, ♂, ♀, Medican, Montana.

Lepidoptera II, No. 4, April, 1918, p. 30.

This name was proposed by Ehrmann as *nomen novum* for *P. smintheus* var. *minor* Verity, the varietal name *minor* having already been employed for a small form of *P. mnemosyne* (Linn.) and, for that matter, for half a dozen dwarfs of other species in the genus.

In examining the specimens labelled as the male and female types of *P. verityi*, we find that they represent a small race similar to, and almost identical with, *P. polus* Ehrmann; the dark pattern being somewhat more reduced in extent. Two so-called "paratypes," males, in the Ehrmann Collection have the marginal maculation of the front wings still more reduced, than in the specimens labelled as types, and absent in the hind wings. They approach the form figured by Verity (Rhop. Pal., Pl. XVI, f. 21) under the name *minor*, which shows a further degree of reduction in the ocellar maculation, the red pupils being scarcely visible in interspace 5 of the hind wing, and with no red on the front wings. Ehrmann's specimens on the contrary have the red centers almost as well developed as in the usual *P.*

*smintheus* var. *sayi* Edw. One might define the form *P. verityi* Ehrmann as a small *P. smintheus* var. *sayi* transitional to *minor* Verity, which, as correctly pointed out by Ehrmann, is *nomen preoccupatum*. Neither *minor* Verity nor *verity* Ehrmann constitute variations of *smintheus* var. *sayi* worthy of retention in the nomenclature.

**Parnassius smintheus** var. **baldu**s Ehrmann, ♂, Olympic Mountains, Washington.

Lepidoptera II, No. 4, April, 1918, p. 29.

The types are two males referred by Ehrmann in his description to *P. smintheus*, but later corrected on the labels as belonging to *P. clodius*. The specimens are rather shabby and worn. The ocellation on the hind wing is not black, as in the original description, both discal black spots having faded reddish centers, as in typical *P. clodius*. An indication of a band of dark sagittate antemarginal maculations is found, as in a considerable proportion of specimens of typical *P. clodius*.

Two months after the publication of *P. smintheus* var. *baldu*s, Ehrmann issued (Lepidoptera II, No. 6, June, 1918, p. 41), a correction substituting the name *P. clodius* var. *kallias* for *P. smintheus*, v. *baldu*s. In the collection of Ehrmann there is preserved a specimen labelled "*kallias*, type" similar to the other two, which are marked *baldu*s. This specimen like the types of var. *baldu*s does not correspond exactly to the description of var. *baldu*s given by the author, as the ocellar spots of the hind wings are likewise not "entirely black." They show a tendency to the restriction of the reddish centers, which, nevertheless, are still clearly seen in both ocelli.

#### PARNASSIIDÆ (Asiatic).

† **Parnassius wahlberghi** Ehrmann, ♂, ♀, Vrumts (*sic*) (Should apparently be Urumtsi), Tian-Shan.

Lepidoptera IV, No. 7, June, 1924, p. 51.

Identical with *Parnassius discobolus* Stgr., subsp. *insignis* Stgr.

It may be appropriate to mention that the well known *P. discobolus* from Turkestan was originally described under this name in June, 1881, by Staudinger in the Stett. Ent. Zeitschr., Vol. XLII, 1881, p. 275.

It happens that I was informed by S. Alphéraky, the noted Russian

entomologist, of the circumstances under which this species was named. He collected a considerable series of the then new species in the mountains of Tian-Shan in 1879. At that time he attributed this butterfly subspecifically to *P. corybas* Fisher v. Waldheim. Alphéraky proposed the name *discobolus*, with allusion to the magnitude of the red ocelli on the disc, and sent a specimen under this name to Staudinger in Dresden, informing him of his intention to describe the butterfly. The description of Alphéraky appeared in the month of November, 1881, in the *Horæ Soc. Ross.*, Vol. XVI, p. 349. Staudinger published the description of the species under the same name *discobolus* at an earlier date, (June, 1881) as already pointed out. According to the law of priority Staudinger must be considered the author of this species. It is worth while mentioning that the manuscript of Alphéraky was dated March, 1881, and also that the description given by Staudinger was based on a series of specimens obtained from a more northern locality, the mountains of Ala-tau.

In the Catalog of the Parnassiidæ by Bryk the name *Parnassius discobolus* is replaced by *tianshanica* Oberthür, since in 1879 Oberthür published a very brief description under this name of a new local race of *P. corybas* from Tian Shan. The description given by Oberthür is really insufficient to constitute in a recognizable way a new species or race of *Parnassius*. It might apply to any of twenty forms, and is wholly inadequate. The description further is not accompanied by a figure, and, though the type may probably be preserved, I wholly doubt the advisability of substituting the name *tianshanica* for *discobolus*. In Oberthür's description (less than three lines long) the name is referred to "Staudinger *in litteris*." Staudinger himself in his subsequent description of *P. discobolus* makes reference to the name *tianshanica*, stating that "under this manuscript name he had distributed specimens to customers," among them no doubt to Charles Oberthür. It is within my knowledge that Oberthür in his collection and in his correspondence ignored the name *tianshanica*, and always wrote and spoke of *P. discobolus* Stgr. Under this name the species has been known everywhere among lepidopterists for nearly half a century, and the effort made by Bryk to displace the name by *tianshanica* seems to me to be under all the circumstances an unnecessarily rigorous and uncalled for application of the "law of priority."



In my own collection, now "nationalized" by the Soviet Government of Russia, and stored in the National Museum of Science in Leningrad, I had over one thousand specimens of *P. discobolus* Stgr., representing its various races from different localities. Its range covers an area at least fifteen hundred miles in extent from west to east. With the help of this vast material I was able to form an idea of the great variability of this butterfly as found in any one particular region. Though in some localities there are well characterized races, one may find occasional specimens from other places approaching these geographical subspecies. In order to establish a local race in *Parnassius discobolus* one must possess a very large amount of material. The specimens, male and female, named as *P. wahlberghi* by Ehrmann have really no validity. The majority of *P. discobolus* which I had from Urumtsi corresponded with typical var. *insignis*, though a certain proportion everywhere in Tian-Shan had a tendency in the direction of an exaggerated ocellation of the hind wings, which form of *P. discobolus*, prevailing in the Alai Valley, has justly received the subspecific name *P. romanovi*, marked in addition to the distinguishing traits just mentioned by the very white ground-color and the large black antemarginal maculations of the hind wings. *P. wahlberghi* of Ehrmann has this enlarged ocellation of the hind wings, which is characteristic of *P. romanovi* and is by no means exceptional, as has been stated, among specimens from Tian-Shan. I therefore regard *P. wahlberghi* Ehrmann as representing the form of var. *insignis*, common in Tian-Shan, which is related to the form which, coming from the Alai Valley, bears the varietal name *P. romanovi*.

\* *Parnassius wahlberghi* var. *thiseus* Ehrmann, ♂, ♀. On label Nyran (apparently should be Naryn), Turkestan.

Lepidoptera IV, No. 7, July, 1920, p. 52.

The male and female types are another couple of *Parnassius discobolus insignis* Stgr., somewhat more suffused with dark color than the last mentioned so-called species. It is by no means a rare case among individual specimens of *P. discobolus* and its races to find such dark suffusion, and in the specimens before me this suffusion scarcely reaches the proportion, which was considered sufficient for the bestowal of the name var. *nigricans* by Staudinger, upon a female, and subsequently employed by Verity for both sexes of a dark form.



- **Parnassius imhovi** Ehrmann. Nyran (should be Naryn, Turkestan).

Lepidoptera IV, No. 8, 1920, p. 59.

A perfectly typical *P. discobolus* var. *insignis*, matching several other specimens of var. *insignis*, which are in the collection of Ehrmann.

- **Parnassius goniscus** Ehrmann, ♂, ♀. Kizilart, Central Asia.

Lepidoptera IV, No. 8, 1920, p. 60.

The locality in the description is Kizilart, a pass over 14,000 feet in height in the eastern region of the Transalai Mountains on the northern border of Pamir. It is a fairly typical *P. discobolus*, as far as the size of the red ocellation is concerned, somewhat approaching var. *insignis* in the development of the black marginal maculation of the hind wings. In the original description of var. *insignis* Staudinger remarks that there are many transitional forms of the typical species *P. discobolus* found in the same locality. My recollection of *P. discobolus* from Kizilart is that the specimens from that locality conform more nearly to the race *romanovi* found in the Alai Valley below the Kizilart Pass. I judge that the specimens of *goniscus* are nearer the form of *P. discobolus* occurring at Hissar, and the possibility is not excluded that these specimens in the Ehrmann Collection are actually from that region, as the authenticity of the locality-labels in the Ehrmann Collection is in many cases very questionable. Many instances have been discovered where a specimen, known to come from a certain locality, has been ascribed to a remote part of the globe by the owner of this collection. In the present case the specimens from "Kizilart" might in reality have come from Hissar, lying west of the Alai Valley in Bokhara.

- **Parnassius ehrmanni** Ehrmann, ♂, Ladak, Thibet.

Encyclop. Entom., Sér. B., III, Lep. 1, 1925 (Paris), p. 91.

The type is a male of *P. tibetanus* Leech, originally described from the western parts of the Province of Se-tshouen in China. The specimen corresponds almost exactly with the figure given by Verity, *Rhop. Pal.*, Pl. XXIV, fig. 10. The locality cited by Ehrmann, "Ladak, Thibet," is highly improbable. The species never has been recorded from the southern slopes of the Himalayas, and we have never received it in the collections made for us by our collectors at

Ladak and its vicinity. Its range is in western China, on the northern foothills of the Himalayas.

Genus SERICINUS.

**S. ehrmanni** Ehrmann, ♂, ♀, Foo-chow, China. (Pl. XXIX, figs. 1, 2.)  
Encyclop. Entom., Sér. B., III, Lep. 1, 1925 (Paris), p. 91.

The types represent *S. telamon* Donovan, var. *montela* Gray. The form is figured by Gray, *Cat. Papil. B. M.*, pl. XIII, fig. 2, and by Verity, *Rhop. Pal.*, pl. VI, figs. 4 and 5.

PIERIDÆ (American).

**Colias philodice**, ab. **alba**, ♂, Ehrmann, S. W. Pennsylvania.

Ent. News, I, June, 1890, p. 93; *l. c.* p. 130.

The specimen is not to be found, and as pointed out on p. 300, Ehrmann says it is not in his cabinets.

**Eurema biedermanni** Ehrmann, ♂, (*errore*) Arizona. (Pl. XXV, fig. 6, type.)

Bull. Brooklyn Ent. Soc., XX, 1925, p. 84.

The type is not a male, as stated by the author, but a female specimen of *Terias mexicana* Boisd. The specimen is an aberration, in which the outwardly projecting lobe-like production of the light ground-color of the fore wing, has been invaded on both sides, above and below, by the dark color of the outer margin of the wing, and the extremity only of this light area is left as a small light spot on a dark ground. We have several specimens in which a tendency in the same direction is revealed, but in none of which has a mere remnant of the lobular light area been left, as in Ehrmann's specimen.

**Euterpia lorenza** Ehrmann, ♂, Honduras.

Lepidoptera IV, No. 6, May, 1920, p. 23.

The type is a somewhat worn specimen of that race, common in Honduras, of *Itatallia pisonis* (Hew.) (Exot. Butt., II, 1857, Pieridæ, pl. VI, figs. 40-41) to which Reakirt applied the specific name *kiçaha* (*Cf.* Proc. Ent. Soc. Phila., II, 1863, p. 349). We have a number of specimens of the same form from Costa Rica, Honduras, and Guatemala.

## PIERIDÆ (African).

**Pseudopontia cepheus** Ehrmann, ♂, Liberia.

Journ. N. Y. Ent. Soc., II, June, 1894, p. 77.

An examination of the type shows that it has nothing whatever to do with the genus *Pseudopontia*. It is a typical specimen of *Leptosia alcesta* (Cramer).

## NYMPHALIDÆ (American).

**Argynnis nikias** Ehrmann, ♂, New Mexico.

The Lepidopterist, I, No. 7, 1917, p. 55.

I have carefully compared the type of *A. nikias*, ♂, with the type of *A. atlantis*, Edw., ♂, and find no difference except that the type of *A. nikias* has the median and basal area on the underside of the lower wing darker than in the type of *A. atlantis* Edw. Such specimens of *A. atlantis* with the secondaries dark on the underside are not at all uncommon. Mr. Kahl has shown me a series of *A. atlantis*, ♂, and ♀, which he captured last summer (1926) on North Mountain, Luzerne County, Pa., at an elevation of about 2400 ft. These entirely agree with the type of *A. nikias* Ehrmann and in our collections we have similar specimens from Nipigon and other northern localities. The type of *A. nikias* is labelled as from Jemez Springs, New Mexico, and it was probably taken at a high altitude among the mountains, if taken there. Barnes and Benjamin are right in their recent Check-List in placing *A. nikias* under *A. atlantis*, of which it is slight variant.

**Vanessa antiopa** (L.) var. **grandis** Ehrmann, ♀, S. W. Pennsylvania.  
(Pl. XXV, fig. 5, type.)

Can. Ent., XXXII, 1900, p. 348.

The type is a dwarfed female of *V. antiopa*, in which the submarginal blue spots of the wings are almost obsolete, their existence only shown by a few blue scales on the wings.

It has become the fashion recently to describe so-called aberrations of well-known species. Genuine species being mostly named, a new generation seeks to get into print by naming aberrations. In a recent publication received by me, "Novitates Macrolepidopterologica" I

discover that no less than seven aberrations of *V. antiopa* have been named in Europe in recent years, and no less than fifty-three aberrations of the common *Vanessa urtica* (Linnæus). We now have more than "fifty-seven varieties" of *V. urtica*. We shall presently be called upon to describe as varieties or aberrations every specimen in our collections, as no two are absolutely alike, any more than two human beings are alike. Huber claimed to personally know the individual bees in a hive, but he did not try to name them all as varieties.

***Limenitis ursula* var. *cerulea*** Ehrmann, ♀, Charleroi, Pennsylvania.

Can. Ent., XXXII, 1900, p. 499.

The type is a male, not a female, as in the original description. The designation of the sex has been corrected upon the label. It is unmistakably identical with *L. arthemis* var. *proserpina* Edwards, belonging to the form in which there is no white upon the upper side of the forewings. I have compared it with the long suite of specimens labelled by Edwards, which are in my possession, and find that there are at least a dozen labelled "var. *proserpina*," which are absolutely the same as Ehrmann's type, these either caught or bred at Hunters, N. Y., or other not distant localities. There are two forms of this variety, some in which there is a white band on the upper side of the primaries, others without this white band. Ehrmann's *cerulea* belongs to the latter form. But this was the form originally described by Edwards (Proc. Ent. Soc. Phila., V, 1865, p. 165) and in consequence the name *cerulea* Ehrmann sinks as a synonym. The synonymy is as follows:

*Basilarchia arthemis* var. *proserpina* (EDWARDS) Proc. Ent. Soc. Philad., V, 1865, p. 148; Butt. N. A., I, 1868, *Limenitis*, Pl. I; l. c., II, 1879, *Limenitis*, Pl. I.  
*Limenitis ursula* var. *cerulea* EHRMANN, ♂ (non ♀) Can. Ent. XXXII, 1900, p. 499.

#### SATYRIDÆ (African).

***Mycalesis erysichthon*** Ehrmann, ♂, Liberia.

Journal N. Y. Ent. Soc., II, June, 1894, p. 77.

A careful examination of the type, which is unique, shows a marked resemblance to the figure of the under side of *M. anisops* Karsch, as depicted in Seitz, Gross-Schmett. d. Erde, Vol. XIII, pl. XXVII g. The figure of this species given by Aurivillius in Seitz' work differs

very greatly from the figure of *M. anisops* given by him in the Ent. Tidskrift, XIV, p. 268, and the descriptions of the species given in the two places cited do not seem to agree. I am inclined to think that some confusion exists in this case.

A careful study of the type and comparison with representatives of many other African species, which we possess, shows that it is characterized by the possession of an elongated patch of raised, black, silky scales, situated near the tornus of the fore wing between veins 1 and 2 not far from their extremities. This is the only marked characteristic of the upper side of the wings, which are dark brown, almost black. The description of the underside given by Ehrmann is quite correct. The insect, while agreeing with the figure of the underside of *M. anisops* Karsch in the location and arrangement of the spots, as given in the work of Seitz, is nevertheless lighter in color on the underside than is shown in the figure to which reference is made. It may be a valid species, but it is remarkably near to *M. anisops* Karsch (*vide* Seitz, *l. c.*).

#### LYCAENIDÆ (African).

##### *Liptena pseudosoyauxi* Ehrmann, ♀, Liberia.

Journ. N. Y. Ent. Soc., II, June, 1894, pp. 77-78.

This is the varietal form of *Cupido ornatus* Mabille, described as var. *vestalis* by Aurivillius, Ent. Tidskr., XVI, 1895, p. 219. Ehrmann's name has priority, and the synonymy is as follows:

*Cupido ornatus* Mabille.

var. *pseudosoyauxi* (EHRMANN) Journ. N. Y. Ent. Soc., II, 1894, pp. 77-78.  
= *vestalis* AURIVILLIUS, Ent. Tidskr., XVI, 1895, p. 219.

##### *Argiolus hollandi* Ehrmann, ♂, Liberia.

Journ. N. Y., Nat. Soc., II, June, 1894, p. 78.

The original description says that the species was described from "1 ♂, 3 ♀ ♀." There are only two specimens extant in Ehrmann's collection, both of which are males, marked "Type." The labels have been changed to read "*Thecla hollandi*." An examination shows that the insect belongs to the genus *Deudorix*. It is the same insect which was named *Deudorix cærulea* by H. H. Druce, Ann. Mag. N. H., (6) V, 1890, p. 28.



The synonymy is as follows:

*Deudorix cærulea* H. H. DRUCE, Ann. Mag. N. H., (6) V, 1890, p. 28.

*D. obscurata* TRIMAN, P. Z. S. Lond., 1891, p. 84, Pl. IX, fig. 13.

*Argiolus hollandi* EHRMANN, Journ. N. Y. Ent. Soc., II, June, 1894, p. 78.

#### HESPERIIDÆ (African).

**Tagiades dannatti** Ehrmann, ♀, Liberia. (Pl. XXVIII, fig. 12, type.)

Ent. News, IV, Nov. 1893, pp. 309-310.

In my "Revision of the Hesperiidæ of Africa, etc.," P. Z. S., 1896, p. 17, I sank *T. dannatti* Ehrmann as a synonym of *T. lacteus* Mabille. Mabille wrote me that the figure of *T. dannatti*, which I had published in the Ent. News, V, 1894, Pl. III, fig. 1, exactly fitted the type of *T. lacteus* at that time in his possession. The type of *T. dannatti* is now again before me; and I discover that the representation of *T. lacteus* given by Aurivillius in Seitz, Gross-Schmett., Vol. XIII, Pl. 76c, differs in important respects from the figure I gave in the Ent. News, which figure I may say I drew myself from the type, which is unique, and which figure closely represents the original. In Seitz' work *T. lacteus* is represented as having the abdomen white, in the type of *dannatti*, as well as in my drawing, the abdomen is dark gray. In the figure in Seitz' plate, the dark marginal markings of the hind wing are wanting, and the insect, as represented, has a quite different facies from the type of *dannatti*. If the figure given in Seitz correctly represents the insect named *T. lacteus* by Mabille, then I am inclined to restore *T. dannatti* Ehrmann to specific rank. I give a photographic representation of the type of *dannatti* on Pl. XXVIII, fig. 12.

#### HESPERIIDÆ (Neotropical).

**Achylodes heros** Ehrmann, ♂, Venezuela.

Can. Ent., XLI, 1909, p. 87.

The type is not a male, as stated by the author, but a somewhat ragged female of *Eantis busirus* (Cramer).

**Eudamus boisduvalii** Ehrmann, ♂, Suapure, Venezuela.

Can. Ent., XLI, Sept. 1909, p. 86.

It is identical with *Lycas godarti* (Latr.) = *Hesperia ceraca* Hew.

The synonymy is as follows:

*Hesperia godarti* LATR., Enc. Méth., IX, 1823, p. 762.

*Hesperia ceraca* HEW., Trans. Ent. Soc., Lond., (3) II, 1866, p. 488; Exot. Butt., V, 1872, Pl. *Hesperia* V, figs. 42, 43.

*Eudamus boisduvalii* EHRMANN, Can. Ent., XLI, 1909, p. 86.

*Lycas godarti* DRAUDT, in Seitz, Gr.-Schmett. d. Erde, V, 1823, p. 991, pl. 191a.

**Eumesia potomoni** Ehrmann, ♀, Suapure, Venezuela.

(Pl. XXVIII, fig. 9, type.)

Can. Ent., XXXIX, Sept. 1907, p. 323.

I agree with Prof. Lindsey, to whom I submitted the type that this species is apparently referable to the genus *Echelatus* G. & S. I do not recognize the species as having been described in any of the literature I have studied. It is not far from *E. simplicior* Ploetz, but is not the same.

We have one specimen, collected by Steinbach in Provincia del Sara, Bolivia, 450 m., which agrees with the type in all respects, except that there are three, instead of two, minute apical white spots, a feature which is of no consequence whatever.

**Goniurus cleopatra** Ehrmann, ♀, Venezuela.

Can. Ent., XXXIX, 1907, p. 323.

The type is not a female, as stated by the author, but a male. It is a ragged specimen, lacking the left hind wing, and is nothing more nor less than a male of *E. doryssus* Swainson, differing in nothing from those so labelled in our collections and agreeing well with previous descriptions and figures. It is a common species.

**Goniurus triptolemus** Ehrmann, ♀, Costa Rica.

Can. Ent., XXXIX, 1907, p. 322.

The type is a typical female of *Eudamus albimargo* Mabille. The right secondary has been poorly patched and repaired on the under side, but the left hindwing is complete. *E. albimargo* is distinguished from *E. doryssus* Swainson by the slightly narrower white outer border of the secondaries, and the fact that the dark ground-color of the wings extends outwardly on the tail, which is generally not the case in *E. doryssus*. Godman and Salvin say: "The differences between *E. albimargo* and *E. doryssus* are slight, but fairly constant.

and the two forms for the present, at least, had better be kept separate." *G. triptolemus* is a synonym of *E. albimargo* Mabille.

**Leucochitonea euphemie** Ehrmann, Suapure, Venezuela.

Can. Ent., XXXIX, Sept. 1907, pp. 317-323.

Sex not given by the author. The type is a male. It is accompanied by two male paratypes and a female paratype. The specimens are typical *Xenophanes tryxus* (Cram.) and the name sinks as a synonym of that species.

**Leucochitonea janice** Ehrmann, ♂, Suapure, Venezuela.

Can. Ent., XXXIX, Sept. 1907, p. 318.

The type is a female, not a male, as stated by the author. It undoubtedly is the female of *Heliopetes petrus* (Hübner). Draudt in Seitz, Gr.-Schm. d. Erde, V, 1923, p. 914, was right in making *janice* Ehrmann a synonym of Hübner's well known species.

We have a male specimen from the Godman and Salvin Collection and other specimens collected by Schaus on Mt. Poas, Costa Rica. There are numerous specimens in the Holland Collection taken in various localities ranging from Costa Rica (Merritt Cary, *coll.*) to Bonda, Santa Marta, Colombia (H. H. Smith *coll.*).

**Leucochitonea jason** Ehrmann, ♂, ♀, Suapure, Venezuela. (Pl. XXVIII, figs. 1, 2, 7, types.)

Can. Ent., XXXIX, Sept. 1907, p. 317.

Under this name Ehrmann described a species of *Eudamidas*, G. & S. In his original description Ehrmann does not state the number of specimens before him, nor the sex of the "types." He says: "I find no special distinction in the markings in the sexes for separate description."

Upon examining his collection we find three specimens labelled as *Leucochitonea jason*, one male and two females. These three specimens have been carefully studied. In reporting upon the Hesperiidæ collected by the Cornell University Expedition to South America, 1919-1920, (Cf. Denison University Bulletin, Journal of the Scientific Laboratories, Vol. XXI, March, 1925, p. 82, pl. XXVII, fig. 1) Professor A. W. Lindsey said: "The male genitalia figured in the *Biologia* under this name [*ozema*] (pl. 85, fig. 17) are not the same as the specimen at hand, which are figured on plate XXVII. I

have examined specimens in the Carnegie Museum and a long series in the National Museum superficially, and find that in all cases the valves are similar to those of the Cornell specimen. There is obviously some confusion in identifications, but which genitalia belong to true *ozema* I cannot say. It is remotely possible that Godman and Salvin had *ozema* before them, but figured the genitalia of an allied species."

Since publishing the paragraph just quoted Professor Lindsey has been studying the subject, and after correspondence with him I resolved to send him Ehrmann's types together with some specimens from the Godman and Salvin collection and a few from my own private collection, which had been taken at Bonda, Santa Marta, Colombia, with the request that he would let me know his findings. This he has most obligingly done.

In his reply to my letter Lindsey says: "I have labelled the specimens of *ozema* and *jason* to indicate my identifications. All of the three from Bonda are *jason*." . . . . . I feel that the only wise course of procedure would be to consider Ehrmann's male as the true type of the species, thus definitely attaching the name *jason* to the species genitally distinct from *ozema*. . . . . I had expected to publish a note on this matter, since I seem to have been the first to note that two species were mixed under the name *ozema*, but I am averse to unnecessary complications of the literature, and will be glad to have you take it up in your paper on the Ehrmann types. I hope that it will be possible to deal with it fully. I am enclosing for your convenience a transcript of the data on distribution, which I have from various collections, and send under separate cover a copy of the paper in which I first mentioned the difference in genitalia. You will note that *ozema* of this paper [Den. Univ. Bull., Vol. XXI, p. 82] is really *jason*."

The table of distribution kindly supplied by Prof. Lindsey is here given:

"Distribution of **Eudamidas Ozema** (BUTL.) and **E. Jason** (Ehrmann)."

British Museum.

<i>ozema.</i>	<i>jason.</i>
Mexico, Guatemala, Honduras,	Venezuela, Ecuador, Upper
Nicaragua, Panama, Colombia,	and Lower Amazon, N. Brazil,
Venezuela, Ecuador, Upper	S. Brazil (Matto Grosso).
Amazon, Lower Amazon, N. Brazil,	
Paraguay, S. Brazil (Matto Grosso).	

U. S. National Museum.

Sapucay, Paraguay

Mexico, *vide* Schaus

Philadelphia Academy.

Amazons (Staudinger), Colima, Mexico;

Chapada, Brazil; Escuintla,

Cartago, 4500 ft., Costa Rica;

Mexico; Amazons (Stdgr.).

Sapucay, Paraguay, Chapada, Matto

Grosso, Brazil; San Diego de

Veraguas, Honduras.

My own limited series represents no other countries.

A. W. LINDSEY."

Since the return to us of the material lent to Professor Lindsey for study, my associate, Dr. Hugo Kahl, has made a careful microscopic examination of the specimens in the Holland Collection, which is deposited as a loan in the Carnegie Museum, and of all the specimens, which are incorporated in the collections of the Museum as its permanent property. The result is given in the following table:

**Eudamidas Ozema** (Butler) ♂.

Carnegie Museum.

- 1♂, San Mateo, Costa Rica (Schaus *coll.*)  
 1♂, Quirigua, Guatemala (Schaus *coll.*)  
 1♂, Cayuga, Guatemala (Schaus *coll.*)  
 2♂♂, Atoyac, Vera Cruz, Mexico, H. H. Smith (Godman Coll'n)  
 1♂, Rio Incavaca, Chiquitos, Bolivia (José Steinbach *coll.*)

---

6♂♂

Holland Collection.

- 8♂♂, Bonda, Dept. Magdalena, Colombia (H. H. Smith *coll.*)  
 1♂, Panama (Mead Coll'n)  
 1♂, Amazons (No. 776, Staudinger)

---

10♂♂

**Eudamidas Jason** (Ehrmann) ♂.

Carnegie Museum.

- 1♂, Suapure, Venezuela (E. A. Klages, *coll.*) *Type.* (Ehrmann Coll'n)  
 1♂, Chapada, Matto Grosso, Brazil, H. H. Smith (Godman Coll'n)  
 1♂, Rio Incavaca, Chiquitos, Bolivia (José Steinbach, *coll.*)  
 1♂, Campo Largo, Bahia, Brazil (J. D. Haseman, *coll.*)  
 2♂♂, Formosa, Bahia, Brazil (J. D. Haseman, *coll.*)

---

6♂♂



## Holland Collection.

- 15♂♂, Bonda, Dept. Magdalena, Colombia (H. H. Smith, coll.)  
 1♂, Cacagualito, Dept. Magdalena, Colombia (H. H. Smith, coll.)  
 1♂, Pará, Brazil (Mead Coll'n)  
 1♂, Trinidad, Br. W. Indies (M. A. Carriker, Jr., coll.)  
 1♂, (No. 929, Staudinger)

—  
 19♂♂

At this point attention should be called to the differences in the genitalia which separate *E. ozema* (Butler) from *E. jason* (Ehrmann). The readiest and most convincing manner of showing the difference is graphically. I have had Mr. Sydney Prentice reproduce as a line-drawing the figure of the male genitalia of *E. ozema* given by Godman in the *Biologia Cent.-Amer., Lep. Rhop.*, III, pl. 85, fig. 17, and also the figure of the male genitalia of *E. jason* (Ehrmann) given by Lindsey (Den. Univ. Bull., Journ. Sci. Lab., XXI, pl. XXVII., fig 1) and these are shown side by side in text-figure 1 of the present paper. It is but proper to state that in reproducing the figure given by Professor Lindsey (*l. c.*) we have taken the liberty of adding the terminal tuft of bristles, which we have found to be highly characteristic and to occur in every one of the numerous specimens, which we have microscopically examined, and which are brought out in sketches recently sent us by Lindsey. We have also adopted the same scale of magnification in the two figures.

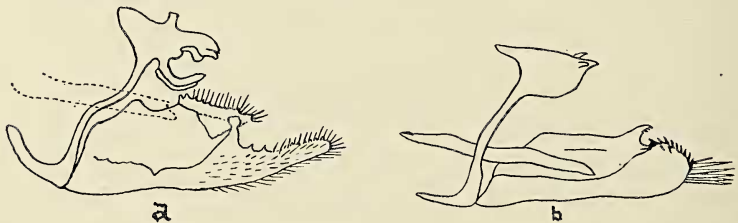


FIG. 1. a. Genitalia of *Eudamidas ozema* (Butler) ♂. After Godman and Salvin, (*Biolog. Cent.-Amer., Lep. Rhop.*, III, pl. 85, fig. 17).

b. Genitalia of *Eudamidas jason* (Ehrmann) ♂. Modified after A. W. Lindsey, Denison Univ. Bull., Journ. Sci. Labs., XXI, 1925, pl. XXVII, fig. 1.

The females of the two species in our possession are but few in number. They have been made the subject of very careful examination. I think that one of the two females in Ehrmann's set (Pl. XXVIII, fig. 2) is the true female of *E. jason* (Ehrmann). The

other female (Pl. XXVIII, fig. 7) appears to me to be a female of *E. ozema* (Butler), at all events it accords best with the female in the Godman and Salvin lot, labelled "*ozema*." (See Pl. XXVIII, fig. 8.) There are two forms of females in our possession, which are easily discriminated from each other: one generally paler in color, with the basal areas of the wings on the upper side not very dark and the spots not tending to run together and form a dark outwardly well defined band; the other with the basal spots confluent, dark in color, and having on their outer margin a sharply defined outline.

The fact is that the male and one of the females in the set of three which are in the Ehrmann Collection must be regarded as the types of his species *E. jason* and one of the females should as relegated to the species named *ozema* by Butler.

The following list shows the material representing the females of the two species which are before me as I write:

**Eudamidas Ozema** (Butler) ♀.

**Carnegie Museum.**

1 ♀, Atoyac, Mexico (*Ex. Godman coll'n*)

1 ♀, Suapure, Venezuela (Ehrmann Coll'n), originally labelled *L. jason*, ♀, to which label has been added *E. ozema*, ♀.

**Holland Collection.**

1 ♀, Pará, Brazil (Mead Coll'n)

1 ♀, Cacagualito, Colombia (H. H. Smith *coll.*)

**Eudamidas Jason** (Ehrmann) ♀.

**Carnegie Museum.**

1 ♀, Suapure, Venezuela (Ehrmann Coll'n.) originally labelled *L. jason*, to which has been added "*jason*, ♀, paratype."

1 ♀, Puerto Suarez, Bolivia (Steinbach *coll.*)

**Holland Collection.**

1 ♀, Bonda, Santa Marta, Colombia (H. H. Smith *coll.*)

In addition to the material here enumerated it may be stated that there are in the Holland Collection three specimens at least two of which suggest that they may be females of *E. jason*, all taken at Bonda, but which cannot be determined as to sex, because of the loss or mutilation of their abdomens.

The synonymy of the two species works out as follows:

**Eudamidas Ozema** (Butler).

*Achylodes ozema* BUTLER, Trans. Ent. Soc. Lond., 1870, p. 515.

*Eudamidas ozema* G. & S., Biol. Centr.-Amer., II, 1895, p. 386.

*Leucochitonea jason* EHRMANN *l. c.* (partim, ♀).

**Eudamidas Jason** (Ehrmann).

*Leucochitonea jason* EHRMANN (partim, ♂, type; ♀, paratype) Can. Ent., XXXIX, Sept. 1907, p. 317.

*Eudamidas* sp.? LINDSEY, Den. Univ. Bull., Journ. Sci. Lab., XXI, 1925, p. 62, pl. XXVII, fig. 1 (Male genitalia). [Since determined by Lindsey *in litteris* to be *E. jason* Ehrmann.]

**Pamphila antenora** Ehrmann, ♂, Suapure, Venezuela. (Pl. XXVIII, fig. 10, type.)

Can. Ent., XXXIX, Sept. 1907, p. 318.

The type is a female, not a male, as stated by the author. It is a female specimen of *Paracarystus hypargyra* (Herr.-Schäff.) and agrees exactly with a male specimen of this species which we have in the Godman and Salvin Collection. This latter specimen has no locality label, but is marked (*ex coll.* Semper). We have it also from Costa Rica (Schaus *coll.*) and from French Guiana (S. M. Klages *coll.*). The French Guiana specimens are fresh and thoroughly typical, with the patagiæ bright rufous. Ehrmann's type was submitted to Professor Lindsey and he kindly supplied the following observations: "It differs from the figure in the *Biologia* by the reduction of the discal spot and the presence of two preapical spots, as well as in the general whiteness of the spots and the apparent lack of rufous on the patagia. However the reduction of the discal spot is common in this group, the preapical spots of this species are known to vary, the patagia still show some rufous scales under a hand lens, and the general worn and faded condition of the type may account for the whiteness of the spots."

**Pamphila elenora** Ehrmann, ♂, Suapure, Venezuela.

Can. Ent., XXXIX, Sept. 1907, p. 318.

Ehrmann does not designate the sex of his type in his description. It is, however, a male and is so marked upon the label. The insect is undoubtedly a male specimen of *Cæliades dubius* (Cramer) = *virgo* Butler (Trans. Ent. Soc., 1870, p. 507). Butler's specimen came from Pará.

**Pamphila theodora** Ehrmann, Suapure, Venezuela.

Can. Ent., XXXIX, Sept. 1907, p. 319.

The author in his description fails to designate the sex of the type. On the label he has marked it as a female, but a microscopical examination shows that it is a male. It is a somewhat worn and damaged specimen of *Phemiades propretius* (Fabr.) of which we have a good series of specimens.

✓ **Spathilipia** (*sic*) (**Spathilepia**) **agathocles** Ehrmann, ♂, Suapure, Venezuela.

Lepidoptera II, No. 9, Sept. 1918, p. 66.

Again the author erred in the determination of the sex of his specimen. The type is a female, and not a male, as stated by him. It is a well marked specimen of *Cecropterus neis* (Geyer). (Cf. Hübn. Zutr. ex. Schmett. IV, 1832, figs. 619-620). Of this species we have a short series from the Godman and Salvin Collection from various localities in Mexico; and others from Costa Rica (Schaus *coll.*). In the Holland Collection there are specimens (*ex* Staudinger Coll'n) from Venezuela, and also specimens from various other localities in northwestern South America.

**Spathilipia** (*sic*) (**Spathilepia**) **isocrates** Ehrmann, ♂, Suapure, Venezuela.

Lepidoptera II, No. 9, Sept. 1918, p. 66.

The specimen is a rather small male of *Cecropterus aunus* (Fabr.). Of this well known insect we have a large series in the Carnegie Museum and Holland collections.

✓ **Telegonus fabrici** Ehrmann, ♂, Venezuela.

Lepidoptera II, No. 3, April, 1918, p. 29.

A typical male of *T. alardus* Stoll, before which it falls as a synonym.

**Thymele borja** Ehrmann, Bolivia. (Sex not given by author).

Can. Ent., XXXIX, 1907, p. 322.

This is a quite typical male specimen of *Eudamus simplicius* Stoll. The transverse hyaline band of the primaries scarcely visible on the

upper side and obscure on the lower side. (Cf. Godman and Salvin, Biol. Cent.-Amer., Rhopalocera II, p. 271) where this is said to be characteristic of a large percentage of specimens of this species.

**Thymele guatemalaina** Ehrmann, ♂, Guatemala.

Can. Ent., XXXIX, Sept. 1907, p. 321.

The type is a specimen of *Eudamus cholus* (Plötz), in no respect differing from that species as described and figured by authors.

**Thymele terracina** Ehrmann, ♀, U. S. Colombia.

Can. Ent., XXXIX, Sept. 1907, p. 320.

A female specimen of *Eudamus harpagus* Felder, in no respect differing from typical specimens of that species.

**Thymele thiemei** Ehrmann, Honduras.

Can. Ent., XXXIX, 1907, p. 321.

The author does not give the sex of his type. It is however an ordinary male of *Eudamus simplicius* Stoll, in which the transverse hyaline band is obscurely shown on the upper side of the primaries and a little more plainly on the underside. It agrees well with scores of specimens in our collections, among them a set received from Mr. F. D. Godman, who kindly presented the second set of his neotropical Hesperiidæ to the Carnegie Museum, subsequently giving all of his vast collection to the British Museum. The name *thiemei* Ehrmann is a synonym of *simplicius* Stoll.

**Thymele viterboana** Ehrmann, ♂, Socorro, Colombia. (Pl. XXVIII, fig. 11, type.)

Can. Ent., XXXIX, Sept. 1907, p. 321.

This is a varietal or aberrational form of *Eudamus proteus*, so far as I am able to determine. The specimen is a male. On the under side of the secondaries the two spots which usually occur near the costa are lacking, and the wings are simply marked by two broad dark transverse bands. The inner band of translucent transverse markings of the primaries also differ in that the spot between veins 2 and 3 is triangular, instead of quadrate, a peculiarity which is worthy of note, and which I have never seen except in this specimen, though



hundreds of examples of *E. proteus* are before me, from all parts of tropical and semitropical America. This may be, and probably is, an individual character.

Since taking up the study of this specimen I have been impressed with the very wide range of variation, and the considerable number of fixed local races of *E. proteus*, which exist. I hope to find time with the vast material which is accessible to prepare a paper upon this subject in the near future.

### HETEROCERA.

#### SYNTOMIDÆ. (African).

*Syntomis hilda* Ehrmann, ♂, ♀, Liberia.

Can. Ent., XXVI, March, 1894, p. 69.

An examination of the types shows that the author has confused two species under one name. The male, which is the first described, must be accepted as the holotype. The description given by Ehrmann agrees with this specimen, of which I give a figure.

The female belongs to the species described by the present writer under the name *S. seminigra* (Cf. Ent. News, IX, 1898, p. 11). The latter is a wholly different insect. Both have been by recent writers allocated to the genus *Ceryx* Wallace. *Ceryx hilda* (Ehrmann) appears to me to be a valid species. It is, so far as I am aware, only known from the male type, which is before me. It is distinguished from *C. seminigra* Holl. by having the abdomen on the upper side bright metallic green, as stated in his original description by Ehrmann; in *C. seminigra* Holl. the abdomen is black, with only a faint trace of green scaling, visible under the microscope. It is further distinguished by having *two* white bands on the abdomen; in *C. seminigra* there is but one white band, immediately behind the thorax. A third feature which separates the two species is the fact that in *C. hilda* there are three small translucent spots on the hind wing, while in *C. seminigra* there is but one such spot, which occupies the entire inner half of the wing.

The female associated by Ehrmann with the male is a typical specimen of *C. seminigra* Holl., with the type of which I have compared it. Unfortunately we do not yet know the male of *C. seminigra*, but I am satisfied that *C. hilda* Ehrmann is not that sex of my species.

The figure of the female of *C. hilda* = *C. seminigra* Holl. by Baede

in Seitz (*Cf. Gr.-Schmett. d. Erde*, XIV, 1926, p. 43, pl. 3b) is evidently a copy of the figure given by Hampson, *Lep. Phal.*, I, pl. I, fig. 20. This illustration is not quite fortunate, as it represents the fore wing



FIG. 2. *S. hilda* Ehrm. Nat. size.

as being relatively somewhat shorter in length and broader near the apex than in the type, with which I have compared it, and which I lent to Sir George that he might have a figure prepared.

The synonymy of the two species is as follows:

***Ceryx hilda* (Ehrmann)**

*Syntomis hilda* EHRMANN, ♂, *Can. Ent.*, XVI, March, 1894, p. 69 (*Non C. hilda* Baede, Seitz, *Gr.-Schmett. d. Erde*, XIV, 1926, p. 43, pl. 3b).

***Ceryx seminigra* (Holland) ♀.**

*Syntomis seminigra* HOLL., ♀, *Ent. News*, IX, 1898, p. 11.

*Syntomis hilda* EHRMANN, (partim, ♀) *Can. Ent.*, XVI, 1894, p. 69.

*Ceryx seminigra* HAMPSON, ♀, *Cat. Lep. Phal.*, I, 1898, p. 48, pl. I, fig. 20.

*Ceryx hilda* BAEDE, (*errore*) ♀, (*l. c.*).

***Syntomis abdominalis* Ehrmann, ♂, Liberia.**

*Can. Ent.*, XXVI, March, 1894, p. 70.

Hampson (*Cat. Lep. Phal.*, I, 1898, p. 141) refers this species with doubt to the genus *Apisa*. In Vol. I of the Appendix to his great work I find the following: "267. *Apisa? abdominalis* belongs to the family *Zygænidæ*." The type is in rather poor condition, the head has been glued in its place upside down, the left antenna has been lost, and only the basal part of the right antenna remains. Enough, however, is preserved to enable a paleontologist to ascertain the exact facts. A careful study under the microscope compels me to wholly differ from Hampson in his reference of the insect to the family *Zygænidæ*. In the first place the antennæ are not *filiform*, but strongly bipectinate at the base, which is all that the type retains of one of them, but this is enough to show that in this important particular the insect is *not* a *Zygænid*. In the second place vein 8 of

the hind wing is aborted, a character, which is *not* true of the Zygænidæ, but *is* true of the Syntomidæ. (Cf. Hampson, Nov. Zoöl., XXV, No. 2, 1918, p. 383 and p. 390). The insect is undoubtedly a Syntomid. Ehrmann on one of the labels attached to the pin has written "*Tasema abdominalis*." For my part I am inclined to refer it to Walker's genus *Tascia*. It agrees closely with the brief description, and somewhat closely, but not very well, with the figure of *Tascia instructa* Walker = *erythropyga* Mabille, which is given by Baede in Seitz (Gr.-Schmett. d. Erde, XIV, 1926, p. 33, pl. 2i).

I give a figure of the type, which I have drawn, restoring the head to its normal position, by aid of the pencil.



FIG. 3. *T. abdominalis* Ehrm. Nat. size.

I think it may be a valid species, and as such it may be listed as *Tascia abdominalis* (Ehrmann).

#### ARCTIIDÆ (North American).

**Leucarctia acræa** var. **klagesii** Ehrmann, ♂, Western Pennsylvania. (Pl. XXV, fig. 8, type.)

Can. Ent., XXVI, Oct. 1894, p. 293.

This is an aberration of *Estigmene acræa* in which the dark markings of the fore and hind wings tend for the most part to become obsolete, except those on the costa of the fore wing.

**Crocota rubricosta** Ehrmann, ♀, Jeannette, Pa. (Pl. XXV, fig. 4, type.)

Can. Ent., XXVII, 1895, p. 348.

This is undoubtedly the female of the insect, the male of which is described by Ehrmann in the same paper as *Crocota belmaria* Ehrmann (Pl. XXV, fig. 3, type). Since Ehrmann published his descriptions we have acquired a considerable series of specimens representing this form, all of which are characterized by the density of the squamation of the wings, which make them easily separable from allied forms. I have no hesitation in regarding them as being well worthy of

at least varietal designation. They may be placed under *opella* as has been done by Hampson, but they differ greatly from typical *opella*, of which we have a long series. There appears to me to be here a field of investigation, in which a definite conclusion can only be reached by the test of breeding. I am quite sure after examining various collections, containing many specimens, that the American species of the genus *Holomelina*, *Eubaphe*, or *Crocota*, whichever one may choose to call it, are still in a very mixed condition, and that these variable little moths should be carefully bred by some one, who may have the time and opportunity for such a research.

Although *rubricosta* has linear priority over *belmaria*, I am inclined to think that common sense dictates that the male of the species, according to almost universal usage, should be accorded the first place in the synonymy of this varietal form, and I record the species as follows:

*C. belmaria* Ehrmann, ♂;  
= *C. rubricosta* Ehrmann, ♀.

#### NOCTUIDÆ (North American).

***Catocala denussa*** Ehrmann, ♂, Allegheny County, Pa. (Pl. XXV, fig. 10, type.)

Journ. N. Y. Ent. Soc., I, Dec. 1893, p. 152.

The type of this species has little to do with *C. habilis* except that the hind wings resemble those of *C. habilis*. (Cf. Mem. A. M. N. H., New Ser., III, pt. 1, 1918, p. 9. Pl. VIII, fig. 25). The figure of the type given on the plate, which has just been cited, is not quite fortunate. After a careful study of the specimen I also find that it corresponds more closely with *C. muliercula* Guenée than with any other species. We have specimens of *C. muliercula*, with similar hind wings. It is remarkable, that, so far as I am able to ascertain, no other specimen exactly like it has been found in this region. Without declaring against the validity of its specific standing, I am strongly inclined to the opinion that it is an aberrant form of *C. muliercula*, with which Ehrmann himself compared it, or that it may be a hybrid between *C. muliercula* and *C. habilis*.

## CERATOCAMPIDÆ (South American).

*Sphingicampa smithii* Ehrmann, ♂, Rio de Janeiro.

Can. Ent., XLI, 1909, p. 87.

The type belongs to the genus *Adelocephala*. I have a good series of specimens, male and female, of the same insect which were collected by H. H. Smith at Chapada, Brazil. These were determined for me long ago by Sir George F. Hampson as being *Adelocephala dimidiata* H.-S. Ehrmann's type corresponds exactly with this set of specimens, and I am under the impression that his type is a specimen obtained by him from H. H. Smith before Smith sold his collection taken at Chapada to me. However, *A. dimidiata* H.-S. was originally described from Rio de Janeiro.

*A. dimidiata* H.-S. was sunk as a synonym of *A. jucunda* Walker by Boisduval, *Ann. Soc. Ent. Belg.*, XV, 1872, p. 91. Kirby in his *Synonymic Catalogue of The Lepidoptera Heterocera*, 1892, p. 742, follows Boisduval. I am inclined to think that there may be a question raised as to this decision. Without having at the moment access to definite knowledge of the type of *A. jucunda* Walker, beyond what Walker gives in his description, I am aware that there passes under his name a species, the hind wings of which are very dark, almost black. This is not true of *A. dimidiata* H.-S. There are a number of very closely allied forms of small species of *Adelocephala* in Brazil, a number of which I possess, and all of the *A. dimidiata*-type, with a dark curved line transversing the primary from the base to the apex. They can be easily differentiated by the markings of the lower side of the wings. In the present case I have no hesitation in saying that *S. smithii* Ehrmann is identical with *A. dimidiata* H.-S., but whether both names are to sink under *A. jucunda* Walker is with me, at least, an open and doubtful question.

## PINARIDÆ (African).

*Pachypas (sic) nasmithii* Ehrmann, Liberia.

Can. Ent., XXVI, March, 1894, p. 70.

Ehrmann described his type as a male. It is a medium sized female of *Gonometa subfascia* (Walker). It agrees exactly with a female in my collection from Sierra Leone, which has been compared with



Walker's type. This is not an uncommon insect in Cameroon, and we have a large number of females, varying in expanse of wing from 3.75 inches to 5.5 inches. We have a pair taken *in coitu*. The male is a very differently shaped and colored moth, having an expanse of only two inches.

The synonymy is as follows:

**Gonometa subfascia** (Walker), ♀.

*Pachypasa? subfascia* WALKER, List Lep. Het. B. M., VI, 1855, p. 1526.

*Pachypasa nasmilthii*, EHRMANN, Can. Ent., XXVI, 1894, pp. 69-70.

#### COSSIDÆ (North American).

**Prionoxystus robiniaë** var. **quercus**, ♀, Western Pennsylvania.

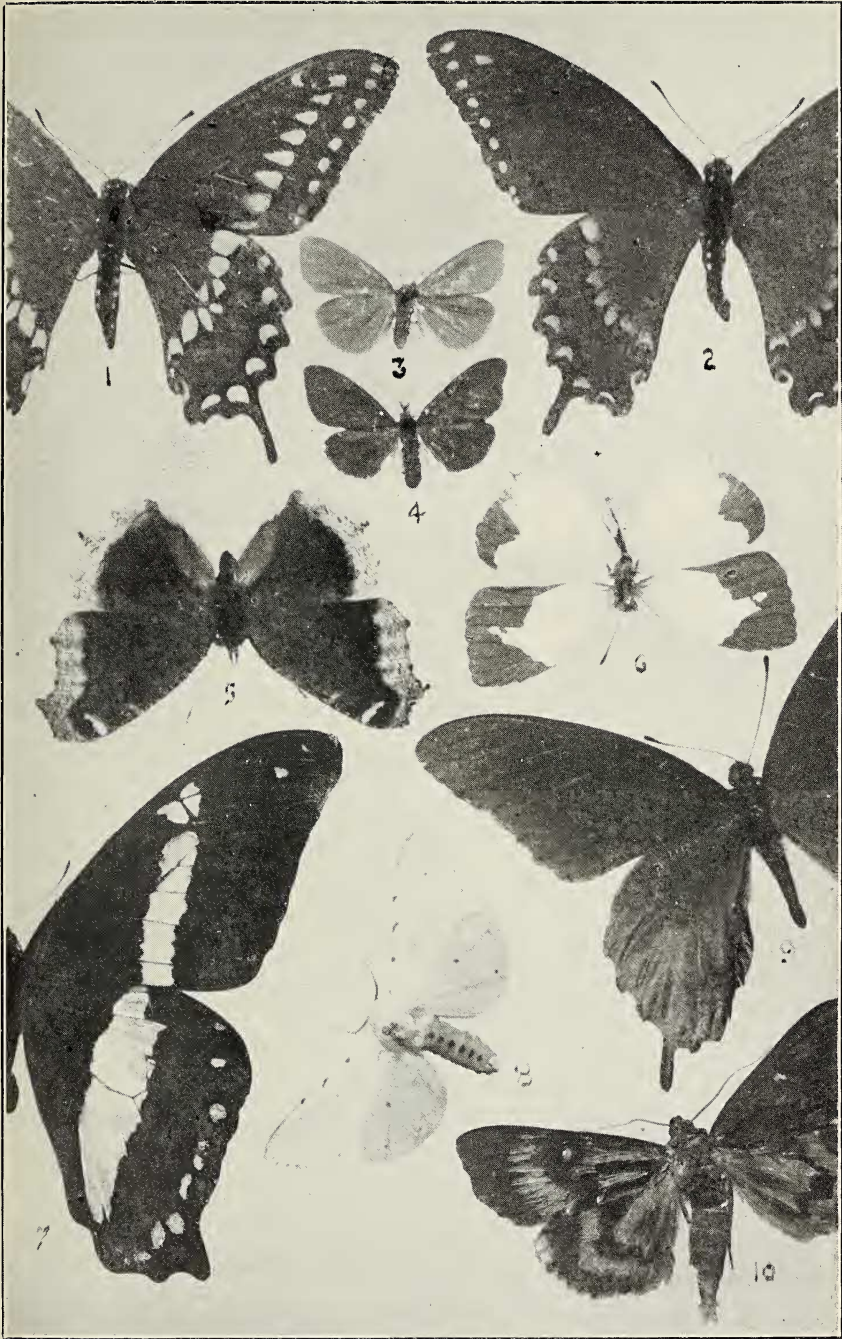
Can. Ent., XXV, Oct. 1893, p. 257.

The type is an aberrant female, in which the outer part of the right hind wing is suffused with yellow, slightly paler in color than the yellow band, which is always found in the same region in the male of the species. The genitalia show that the specimen is a female, without any other tendency to gynandromorphism than the yellow coloration of the right hind wing. The wings of normal females are generally deep black at the base shading outwardly into paler. The wings in this specimen are generally paler, but this may in part be accounted for by the fact that the specimen is somewhat worn and rubbed.



## EXPLANATION OF PLATE XXV.

- FIG. 1. *Papilio semialba* Ehrmann, ♂, Type.  
FIG. 2. *Papilio ehrmanni* Ehrmann, ♂, Type.  
FIG. 3. *Crocota belmaria* Ehrmann, ♂, Type.  
FIG. 4. *Crocota rubricosta* Ehrmann, ♀, Type.  
FIG. 5. *Vanessa antiopea*, ab. *grandis* Ehrmann, ♀, Type.  
FIG. 6. *Eurema biedermanni* Ehrmann, ♀, Type.  
FIG. 7. *Papilio mantilheus* Ehrmann, ♂, Type.  
FIG. 8. *Estigmene acræa*, var. *klagesii* Ehrmann, Type.  
FIG. 9. *Papilio obsoleta* Ehrmann, ♂, Type.  
FIG. 10. *Catocala denussa* Ehrmann, ♂, Type.



Types in Ehrmann Collection.

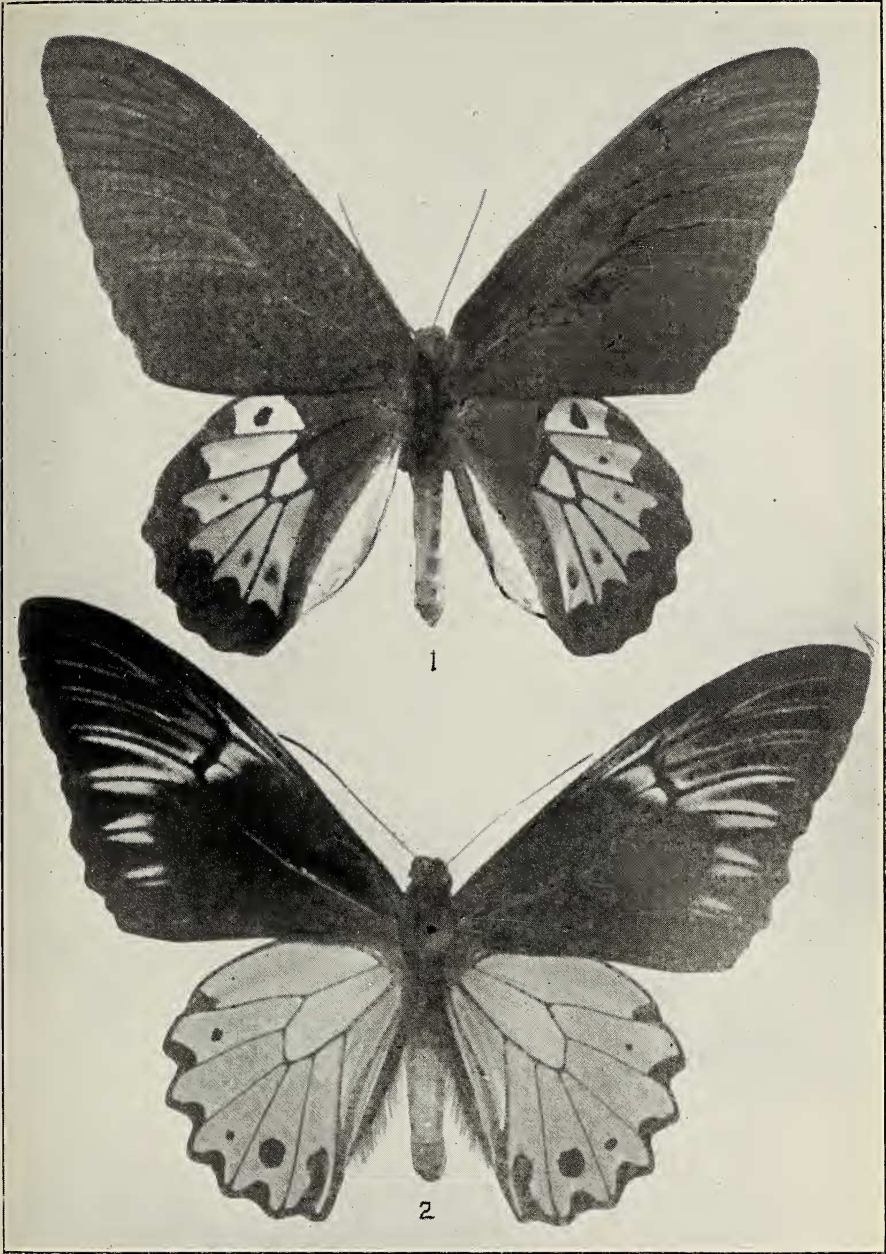






## EXPLANATION OF PLATE XXVI.

- FIG. 1. *Ornithoptera cambyses* Ehrmann, ♂, *Type*.  
= *O. darsius* Gray, ab. *cambyses* Ehrmann, (See p. 324).
- FIG. 2. *Ornithoptera magnifica* Ehrmann, ♂, *Type*.  
= *O. amphrysus* (Cram.) var. *magnifica* Ehrmann, (See p. 325).



Types in Ehrmann Collection.

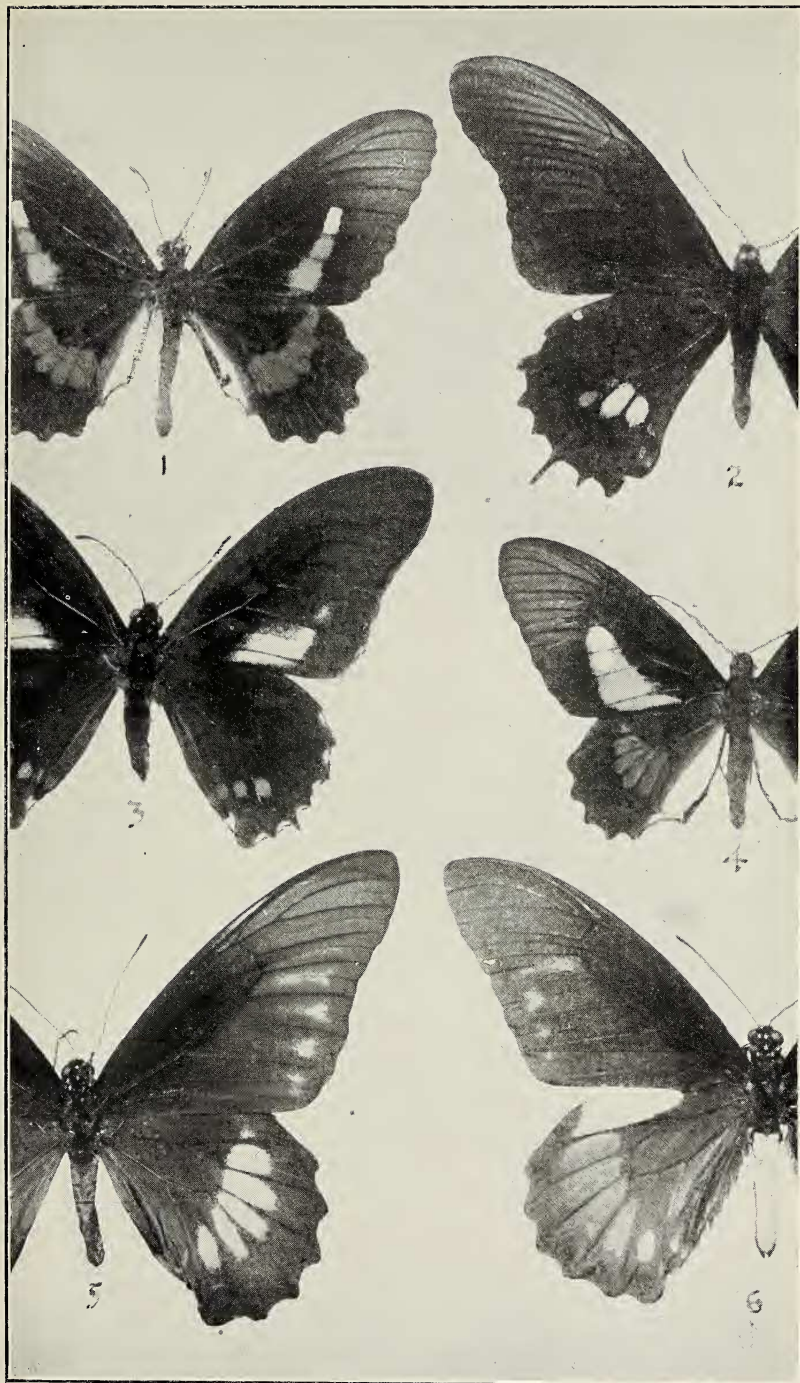






## EXPLANATION OF PLATE XXVII.

- FIG. 1. *P. thrasybulus* Ehrmann, ♂, *Type*.  
= *P. anchises* Linnæus, var. *thrasybulus* Ehrmann. (See p. 321).
- FIG. 2. *P. metrobates* Ehrmann, ♂, *Type*.  
? var. of *P. nymphius* R. & J., which latter may be of specific rank.  
(See p. 320)
- FIG. 3. *P. morrissi* Ehrmann, ♂, *Type*. (See p. 320.)
- FIG. 4. *P. cleostratus* Ehrmann, *Type*. (See p. 316.)
- FIG. 5. *P. chromealus* Ehrmann, ♀, *Allotype*. (See p. 315.)
- FIG. 6. *P. chromealus* Ehrmann, ♂, *Type*. (See p. 315.)



Types in Ehrmann Collection.

